FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

Volume 33—Number 49 | DECEMBER 9, 1961 | 1 Year $5, 2 Years $8

FEEDSTUFFS *Features This Week*

SWINE RESEARCH—Swine research reports from the annual meeting of the American Society of Animal Production appear on **page 6.**

NEW TEXAS MILL—A Texas firm builds a new mill to keep pace with the South's changing animal agriculture profile. **Page 18.**

ARTIFICIAL RUMEN—Evaluation of feedstuffs through use of the artificial rumen is discussed on **page 26.**

SOLIDS-NOT-FAT CONTENT—A review of the effect of nutrition on the solids-not-fat content of milk is presented on **page 40.**

MILL MODERNIZATION—A South Dakota firm has a modernization and expansion program underway at five facilities it operates. **Page 62.**

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Committee to Prepare Broiler 'Self-Help' Plan

WASHINGTON—A sub-committee of the National Broiler Advisory Committee has been named to draft a possible "self-help" program and "to study necessary legislation which would be required," the U.S. Department of Agriculture announced this week following a meeting of the full committee.

USDA has said that the committee was established as a result of "requests from leaders of the broiler industry," but the sources of the requests were not identified.

The committee, which met here Dec. 4-5, was named, USDA said, "to review possible programs involving supply adjustments or marketing regulations through marketing orders, marketing quotas, or price support."

The eight-man sub-committee was directed to prepare program recommendations for the full committee's review when it reconvenes in Washington Jan. 4-5.

(One report indicated that at the committee meeting this week, there was a vote of 20 to 10 in favor of taking steps to get marketing orders for the broiler industry.)

Sub-Committee

Named to the sub-committee were Cornelius Bateson, Salem, Ore., chairman; Ted Cameron, Little Rock, Ark.; Edward H. Covell, Jr., Easton, Md.; Marshall B. Durbin, Sr., Birm-

(Turn to **BROILERS**, page 81)

Purina Reports New Highs in Sales, Earnings

ST. LOUIS — The Ralston Purina Co., for the fourth consecutive year, has reported a new high in earnings.

Net sales for the fiscal year ended Sept. 30, 1961, were $581,042,216, up 10% from the previous year. Net earnings were $19,907,808, representing an increase of approximately 5%.

For the feed division—the company's largest major division—all-time highs in both tonnage and total dollar sales volume were reported for the year.

The annual report refers to sales volume gains for some of the divisions of the company, but for the most part the earnings picture for specific divisions is not mentioned.

Divisions of the company in addition to feed include sanitation products, international, soybean, grain merchandising and Ralston (dog food and cereals).

Feed tonnage and dollar volume, the report said, ended the year at all

(Turn to **PURINA** page 8)

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Purina Notes Integration Steps

ST. LOUIS—The Ralston Purina Co.'s move into the field of completely integrated poultry operations—from breeders through processing and marketing of the end products—was pointed out in the company's recently issued annual report.

Donald Danforth, chairman of the board, said in the report: "As we look toward the future, it seems apparent that our company will tend to become still more diversified in the food field, which is our business. One step in this direction is further integration in poultry; in simplest

(Turn to **INTEGRATION**, page 85)

Broiler, Egg Price Rises Bring Cheer

Some cheering pre-holiday news came the way of broiler and egg producers this week.

Paying prices on broilers in the Southeast rose to a mostly 13¢ lb. level, with some birds going at 14¢. In Delmarva prices got up to 16.1¢. These levels, 1¢ higher than a week earlier in the Southeast and as much as 2½¢ higher in Delmarva, are said to afford some growers their first profit on operations in six months.

The egg picture brightened this

(Turn to **PRICES**, page 81)

Drive for Controls Moves to Broilers

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Now that proposed turkey marketing orders are being studied, the drive for use of marketing agreements and orders has shifted to broilers.

Following a two-day meeting of the U.S. Department of Agriculture's official broiler industry advisory committee, a sub-committee was named to draft what is being called a "self-help" program and to study legislation which would be needed to make an industry-wide program operative. (Also see accompanying story.)

As with other groups from agriculture which have had no experience with marketing agreements and orders, the session was said to have become to some extent an elementary exercise in this complicated field.

USDA had on hand a group of exponents of marketing agreement and order techniques, and they were re-

(Turn to **CONTROLS**, page 81)

Discuss Poultry Coordinating Group For Mid-Continent

By MARTIN E. NEWELL
Feedstuffs Staff

KANSAS CITY—Preliminary discussion of the formation of a coordinating group for poultry and allied industries in the mid-continent area took place at a meeting in Kansas City preceding the "quickie" convention of the American Poultry Hatchery Federation Dec. 5. Those attending the meeting felt that problems arising from current market and legislative developments in the poultry field had become so complex that a medium was needed for the exchange of ideas between various seg-

(Turn to **COORDINATING**, page 4)

Clinic Answers Questions on Marketing Orders

By THOMAS E. LETCH
Feedstuffs Staff

KANSAS CITY—The "star of the show" failed to appear, but the marketing order clinic, held as part of the American Poultry & Hatchery Federation's Midwestern "Quickie" Convention here Dec. 6-7, nevertheless produced some lively discussion.

Dr. James Ralph, assistant secretary, U.S. Department of Agriculture, was scheduled to present information on the procedures for implementing marketing orders and to answer questions on the turkey marketing orders. However, he missed a plane in Denver and did not arrive.

The clinic went on anyway with Don Turnbull, executive secretary of the APHF, moderating a panel discussion in which the participants were Joe Morrow, Morrow Milling Co.,

(Turn to **CLINIC**, page 84)

Michigan Feed, Grain Dealer Group Elects

By DON E. ROGERS
Feedstuffs Staff

GRAND RAPIDS, MICH. — The Michigan Feed & Grain Dealers Assn. elected officers at its meeting Dec. 6-8 in the Pantlind Hotel, Grand Rapids.

Edwin Baur, Little Brothers Co., Kalamazoo, was elected president. He succeeds Ray Bohnsack, Farm Bureau Milling Co., Lansing.

Also elected were Monte Kahlbaum, Kahlbaum Brothers, Carleton, vice president, and Gary Marshall, Lansing Grain Co., Lansing, financial secretary. Nevels Pearson was reappointed executive secretary.

New Directors are Mr. Marshall; Fred Klaus, Michigan Bean Co., Sandusky, and Leslie Rowland, Blissfield Co-op Elevator, Blissfield.

More than 300 persons registered for the meeting.

Most Oppose Orders at Oklahoma City Hearing

By Special Correspondent

OKLAHOMA CITY—Opposition to proposed national marketing orders for turkeys and turkey hatching eggs was evident from the beginning of the fourth public hearing in a nationwide series of six. Most of the witnesses who testified at the Oklahoma City hearing Dec. 4-6 spoke against the proposed orders.

Thirty-one persons testified here. One count showed 18 opposed to the orders and 7 in favor. Other witnesses appeared to explain terms and provisions.

A delegation of 26 Texas turkey growers and hatcherymen was the most vocal group opposing the proposed orders. Oklahoma Farm Bureau staff members coordinated efforts of opponents to the proposals, holding several press conferences to air views of those against the orders.

There was little organized effort on the part of proponents to build a case with numbers of witnesses or to get their story told outside the hearing room.

About 150 people were in a courtroom of the Oklahoma City Federal Building during the three days of the hearing sessions. They represented turkey industry people from six surrounding states. F. G. Osmond Hyde, USDA senior hearing examiner, who presided during the hearing session, pointed out the hearing was to gather information on which the secretary of agriculture can base a decision. He asked for evidence for or against the need for marketing orders, rather than opinions from witnesses.

(Turn to **HEARING**, page 85)

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Recommends Changes In Turkey Orders

By FRED TUNKS
Feedstuffs News Editor

CHICAGO — A representative of Land O'Lakes Creameries, Inc., Minneapolis, a major turkey processing and marketing and feed manufacturing cooperative in Minnesota, outlined certain recommended changes in proposed turkey marketing orders.

(Turn to **CHANGES**, page 81)

FEEDSTUFFS®

The Weekly Newspaper for the Feed Industry

Published by THE MILLER PUBLISHING CO.

2501 Wayzata Blvd., Minneapolis, Minn.

Address Mail to: Box 67, Minneapolis 40, Minn.

Telephone FRanklin 4-5200 - All Offices Serviced by Bell System Teletype

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Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 40, Minn. Single copies 50¢. Subscription rates: One year $5, two years $8, in the U.S., U.S. possessions, Canada and Pan-America. Add $3 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least three weeks' advance notice. Ask postman for form 22-S. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, Cropilfe, Farm Store Merchandising, Home and Garden Supply Merchandiser, Feedlot and Professional Nursing Home. Second-class postage paid at Minneapolis, Minn.

The regional circulation of this issue is concentrated in the southeastern states

Time to Slow Down

WHILE THE MERITS and demerits of the proposed turkey marketing orders are still being debated across the land, government control stage managers already have shifted some of their attention to another wing of the poultry industry. An advisory subcommittee has been named by the National Broiler Advisory Committee to draft a self-help proposal, study possible legislative changes and report back to the full committee Jan. 4.

It is apparent that speed in arriving at some conclusions is essential to government officials' strategy in seeking industry support for their goals. Sufficient support would have to be obtained early in 1962 if legislative action is to be accomplished in the next session of Congress. Controls for broilers are not authorized in the present farm legislation, so a change in the law would have to precede further moves in this direction.

A GREAT DEAL OF RESPONSIBILITY rests on the men who have been named to the broiler subcommittee. Their deliberations should take into account not only short-range effects of controls—marketing orders or whatever other types of restrictions which may be considered—but also the longer-range effects of such programs. And their conclusions should be based on their conscientious evaluation of industry opinion and attitudes concerning broiler controls specifically and government intervention in business in general.

Their task will not be an easy one, and their decisions on recommendations could have enormous influence on the direction of agriculture for years to come.

Meanwhile, broiler prices are showing some improvement. Whether this trend will continue is not known for certain, but this will help the committee keep in mind the fact that economic forces continue to influence the health of the broiler industry on the well side as well as the sick side.

THE SPEEDED-UP timetable on turkey orders, while sharply criticized by some witnesses at the current hearings, can be defended by those who believe in controls on the basis of the largely seasonal nature of turkey production. In other words, they contend that if marketing orders are deemed necessary, they must be put into effect before production plans for 1962 are fully made.

However, in light of substantial evidence that turkey production for next year more than likely will be trimmed with or without controls, this argument is not particularly valid.

For broilers, the need for speed has even less validity. Seasonal considerations are much less of a factor for broilers than for turkey production. The broiler industry owes itself an opportunity to consider in intimate detail all the possible ramifications of controls. And this takes time.

Top of the Hopper

THE RALSTON PURINA CO'S annual report—which, not incidentally, shows a new high in earnings for the fourth consecutive year—includes a number of points of interest when one reflects upon problems, trends and developments in the feed industry and agriculture generally, as well as in this largest of all feed manufacturers.

The theme of this year's report is "Food Is Our Business," and the role of all company divisions in more efficient production of modern foods is cited. The chairman said it seems apparent that "our company will tend to become still more diversified in the food field, which is our business." In this connection, he cited the company's moves into completely integrated poultry operations, with the acquisition of four poultry firms at the time of the report. . . . Emphasis on diversified, full-line feed volume and on building and strengthening dealer distribution was said to have helped overcome setbacks in broiler

(Turn to **TOP OF THE HOPPER**, page 81)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

The vigor of the feed business varied greatly from area to area this week. In the majority of areas business was about the same to somewhat slower. However, there were areas where business volume was reported to be improved.

Six-day operations at capacity were common in the South Central, and in the Southeast business is reported to be good to very good. Even in areas where volume is off slightly from a week ago, good tonnage figures are being chalked up.

The big news this week in feed circles was the improved prices being received by broiler growers. In most cases prices are now at break-even or better levels. Low egg prices continue to cause concern.

Cattle, dairy, swine and layer rations continue to be good movers.

Sharp advances in the prices of soybean meal and millfeeds are expected to be reflected in new price lists.

The wholesale feedstuff price index advanced 1.4 points to 82.7 this week, 10 points above the year earlier level. The feed-grain index, on the other hand, dropped 2 points to 63.3 for the week. That figure, however, was 4.3 points over a year ago.

The hog-corn ratio, based on Chicago prices, was 14.7 this week, the same as a week earlier, but almost 4 points below a year ago. (Major market roundup and ingredient quotations appear on pages 82-84.)

Northwest

Feed business in the Northwest was spotty this week—some manufacturers reported business slower, and some said it was better than a week ago. Feed firms reporting lower volume this week attributed it to a lower level of production for bookings as compared with last week. One firm's spokesman said this week's business volume is 10% over last week. Several firms indicated business was about the same as last week.

The month is said to be off to a good start in comparison with December a year earlier, which was a good month.

Cattle feed volume is growing and is expected to take a jump when some regular cattle feeders get thier feeders. It is reported that some of these feeders have been holding off buying their feeder cattle due to high prices.

Dairy and hog feeds continue to be a good boost for the total volume figure.

Prices are expected to be 50¢ to $3 higher on the new price lists, due to sharp advances in soybean meal and millfeed prices. One firm reported taking the unusual action of putting out a "mid-week price sheet" because of the sharp ingredient advances.

Southwest

Formula feed business in the Southwest started out the last month of the year at about the same pace as has been experienced for the past few weeks. Some mills report that they have a satisfactory backlog of orders into the following week, but there were also reports of slower business. Some mills have had promotions on in the past weeks which kept operations at a high level during that period but indicate some slowing of total volume after promotions were completed.

The sharp advance in millfeeds and soybean meal will cause some higher prices on price lists going out this week.

In general, cattle feed shipments are satisfactory, but the pace is slightly off the level of previous weeks. It was expressed that a turn to some winter-like weather would be a stimulus to heavier cattle feeding.

Broiler prices have worked a little higher but broiler feed sales are still slow. Some trade sources expressed some concern over current egg feed programs with egg returns still off.

Hog feed sales continue good as total hog numbers are well over that of a year ago.

Northeast

A good fall feeding season in the New England states pushed dairy feed turnover 10% above the year-ago period.

But a 7% to 8% decline in poultry feed sales during the same months in the area offset mixers' gains to a large extent.

The sales pattern was about unchanged from the previous week in the western New York area as demand held about steady. A little more broiler feeds are showing up as birds, already on feed for the January-February market, develop larger appetites. There was some grumbling by milk producers in the area about rising costs of production.

Egg prices rallied partially from the preceding week, with a rise of 3¢ a dozen in New York and a gain of 1 to 2¢ in the New England states.

Broilers firmed up in the latter area, with a rise of 1½¢ lb. to 15½¢ and a one-day top of 16¢.

The feeling still persists among some in the trade that the ingredient market is "out of joint" and some adjustments downward will be made from now until the end of the year, unless this area gets a good snow cover.

Running time of formula feed manufacturers ranged from 36 hours in western New York to 40 hours in the New England states.

Southeast

Formula feed business in the Southeast is reported as being good to very good, depending upon localities. Broiler feed manufacturers continue to operate at about 70% of normal capacity, with chick placements remaining about the same.

Prices of broilers were up slightly again this week, with sales being made at 13½ to 14¢ lb., f.o.b. the farm, which affords good growers a small profit. Many believe that prices will continue to improve.

Central States

The first full week of December, while not in any sense a bad one from the standpoint of volume of fresh sales, had much in common with other "first weeks of the month."

(Turn to **MARKETS**, page 87)

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Egg Producers Warned—

Don't Miscalculate Fowl Returns

By MARTIN E. NEWELL
Feedstuffs Staff

KANSAS CITY—There is no ready solution for the problem created by low prices for fowl sold out of egg raising flocks, Howard Stamper, F. M. Stamper Co., Moberly, Mo., told the Midwestern Quickie Convention of the American Poultry Hatchery Federation in Kansas City Dec. 6-7. The quickie meeting was combined with the annual meeting of the Missouri Poultry Improvement Assn.

Mr. Stamper pointed out that egg producers can make a serious miscalculation if they count too much on returns from fowl marketed to offset the costs of replacement pullets. The miscalculation could cost as much as 20¢ per bird or 1¢ per dozen eggs over the productive life of the laying bird.

Industry observers noted that the fowl market situation pointed out by Mr. Stamper is one which should receive consideration by feed men and others considering getting into egg production operations. The discussion of the problem is considered particularly timely because of actual or anticipated shifts from broilers to table eggs.

There are several reasons why laying flock culls must sell below the level of broiler chickens, Mr. Stamper said. He said there is an economic ceiling on the price of these fowl, which is set by the price of broilers. Processors cannot pay as much as the price of broilers, delivered at plant.

Differences Explained

Mr. Stamper said it costs about 2½¢ more to process fowl than an equivalent poundage of broiler. This is due to the fact that: (1) The yield of product is 68% of the live weight of a broiler and only 63% of the live weight of the fowl. This amounts to 1.8¢ lb. (2) Labor costs in processing are 2¢ lb. for broilers and 3.5¢ lb. for fowl due to lower processing line speed, greater percentage of condemnations and variations in volume of the latter. (3) The value of giblets (on a 15¢ broiler market) is a plus 0.2¢ to the processor of broilers but a minus 0.4¢ for the byproduct of the fowl due to quality. This puts the net cost of the product to the processor at 24.5¢ lb. for the broiler, but 28.5¢ for the fowl, starting from the same plant price of 15½¢, delivered.

So fowl must be bought at 4¢ less, plant basis, to come out even. On top of that must be considered the fact that there is a variation in volume of marketings of fowl from month to month. The peak for fowl marketing comes in October, and offerings then are generally greater than the plant can handle, but marketings will be less than needed in April. So, the processor, to keep his plant running evenly, must buy more than he needs in October and put it into cold storage until the slack season in April. This storage cost averages out about 2½¢ lb., Mr. Stamper said, and so in October, the processor must buy at a price he thinks broiler chickens will sell for in April, minus 2½¢ carrying charge. This could bring the total fowl discount to 6½¢, plant basis.

What the processor can pay the poultryman on the farm depends on the cost of moving the fowl to the processing plant. Collection costs average rather high, Mr. Stamper pointed out, running 2-3¢ most of the time and often amounting to 4¢. In cases where there may be middlemen involved in fowl marketing, the farm price will have to go down an additional 1¢ or 2¢ to accommodate this handling.

Thus, overall, it would be optimistic to expect to get a price more than 6¢ below the broiler market for fowl, and the difference often will be 7 or 8¢ less, depending on the individual location and circumstances.

Mr. Stamper said that, other things being equal, his firm preferred to purchase fowl rather than broilers because of the better flavor and texture of the meat.

As Low as 3¢ Lb.

The lowest price paid this year to his knowledge, Mr. Stamper said, was 3¢ lb. for fowl which originated about 1,000 miles from the processing plant which bought them, and the bottom levels have been mostly between 3¢ and 7¢ lb. The low prices of broilers were a major factor in this, plus the fact that housewives did not respond to the low price of fowl in grocery stores.

The speaker commented that evidently the present generation of housewives do not know how to prepare fowl, having become used to broilers, and after the initial try with low-cost fowl they do not come back again. This could probably be corrected by education, he said, but the grocer is not interested in devoting his time to education, especially on a low-priced item which he does not normally sell in very large volume. Broilers have the market about seven to one, he pointed out. Breeder hen turkeys face the same problem, he added.

Should egg producers engage in an advertising campaign to show the housewife how to use these birds? Mr. Stamper thought not. It is true that such a program, if it raised prices just 1¢ lb., would return the egg people an additional $7 million. But they are working on the small part of the market, he pointed out. The same money probably could raise egg prices 1¢ a dozen and that would return $51 million. Also, the same money applied to broiler advertising would have the effect of raising fowl prices at the same time. So, a campaign in the fowl area would be like "going after gnat with a cannon," Mr. Stamper said.

Improvement Seen

To some extent time will improve net prices to the egg producer for fowl, as the size of flocks increases. The larger the flock, the less cost is involved in moving the birds to the processors, and in addition the processor will pay better if he knows he has an assured supply ahead at a certain time. This will reduce his raw material carrying charges. For that reason, some large egg operations are now making contracts with processors to take all their laying culls.

There also is some improvement to be expected from a leveling out of the fowl marketing curve, which also will result from large, year around egg projects, he said.

More for Floor Birds

Mr. Stamper was asked why more money was paid for floor birds than for cage layer culls. He said this was due to the fact that bone fragmentation occurred more readily in the cage-raised bird. It is nearly impossible to put cage layers through the present mechanical equipment in a processing plant, he said. "We don't know what to do with them, and neither do others," he commented.

However, Mr. Stamper said that if egg production is going ahead on the cage basis because of better egg production efficiency, then the processing industry eventually will have to find some method or machinery to take care of them.

Mr. Stamper expressed little hope for the development of a large export market for canned chicken. He said his firm had sold some output to Germany recently, but mentioned an order from England for a large amount on which his firm recently had bid a price which they felt was the lowest they could possibly make. He said the order had gone to a Bulgarian firm at just about one half the Stamper price. The Bulgarian product was very good, he said, and actually because of the hand work in the Bulgarian product in placement of the meat in the can, had a more attractive appearance than the Stamper product. "I felt very deflated," he said.

COORDINATING

(Continued from page 1)

ments of the industry and for a forum through which coordinated policies could be developed and supported.

Charles Meler, Nashville, Ill., hatcheryman, and LeRoy Kruskop, secretary of the Iowa Poultry Improvement Assn., Ames, were selected by the group to serve as coordinators in arranging a meeting of various organizations in the near future. After further preliminary work, a date will be set for a general meeting, the coordinators said. A date sometime in January might be the most suitable, it was indicated.

It was pointed out at the meeting that there are several regional organizations in the Northeast, Southeast and Pacific Coast, which represent all elements associated with poultry raising, but none in the mid-continent area which can speak for all groups.

A substantial portion of the discussion at the Kansas City meeting was concerned with the possible effects of marketing orders on the turkey, broiler and egg industries, and fears were expressed that lack of understanding among various segments of the affected industries could lead to serious problems resulting from unworkable regulations.

Dr. Salsbury's Holds Annual Sales Meeting

CHARLES CITY, IOWA—Seventy-five members of the field staff of Dr. Salsbury's Laboratories, Charles City, attended the firm's annual sales meeting at Mason City and Charles City. The sales staff conferred three days with members of the firm's marketing and research divisions.

One of the main speakers was Tom Lawrence, management consultant, Kansas City.

A number of territory managers were recognized for achievements. The Dr. J. E. Salsbury award, "Wise Old Owl," was presented to territory manager W. C. Myers, Fayetteville, Ark., and the H. G. Bos award, "Young Rooster," went to John P. Kooistra, Mankato, Minn. The J. E. Salsbury (chairman of the board) award is for sales efficiency and the H. G. Bos (vice president in charge of marketing) is for sales improvement.

Recognized for completing 25 years of service with the company were: Earl T. Landing, Orlando, Fla.; S. E. Davidson, Waco, Texas; A. F. Achilles, St. Paul, Minn., and F. H. Runchey, Goshen, Ind. Jesse W. Tallent, territory manager from Harrisonburg, Va., was recognized for completing 20 years of service.

Corn Shipments Bring Storage Income Losses

DES MOINES—Heavy shipments of government corn, resulting from the federal feed grain reduction program, are causing some Iowa bin owners to take cuts up to 65% in income from storage, it has been reported.

About 28 million bushels of corn has been ordered removed from private storage facilities in Iowa. One Des Moines terminal is losing 65% of its stored corn.

The Commodity Credit Corp. recently issued loading orders for 54 million bushels in 19 midwestern states.

Objection to the government step is being heard from some grain men.

The Des Moines Register quoted a Des Moines grain trader as saying, "Commercial storage facilities were built in good faith. If they want to keep faith with the trade, the CCC (government) bins should be emptied first rather than the commercial storage facilities."

Thomas Barber, Smith Sales Manager, Dies

PORT MONMOUTH, N.J.—Thomas A. Barber, 62, Rumson, N.J., general sales manager of J. Howard Smith, Inc., Port Monmouth, and associated companies for the past 14 years, died Dec. 3.

Mr. Barber was a director of the National Fisheries Institute and had served as chairman of the industrial products division.

Mr. Barber began his business career as an office boy with Mitsui & Co., Ltd., where he worked his way up to become American manager of the sundries and fats and oils division. He remained with Mitsui for 30 years and later held executive positions with Bunge Corp., and Brown Linseed Oil Co.

Survivors are his wife, two brothers and a sister.

Russell D. Ward, Feed Company Head, Dies

CHICAGO—Russell D. Ward, 69, who was head of the Ward Feed Co., with offices in Chicago and Glen Ellyn, Ill., died Dec. 2 at his home in Sarasota, Fla.

Funeral was Dec. 7 in Wheaton, Ill. Survivors are his wife, Lucile; two sons, Robert, with the Soft Phosphate Institute, Media, Pa., and Donald; two daughters, Mrs. William Prescott and Mrs. Donald Suprenant; his father, A. T. Ward; a brother; a sister and nine grandchildren.

FEED DISTRIBUTOR DIES

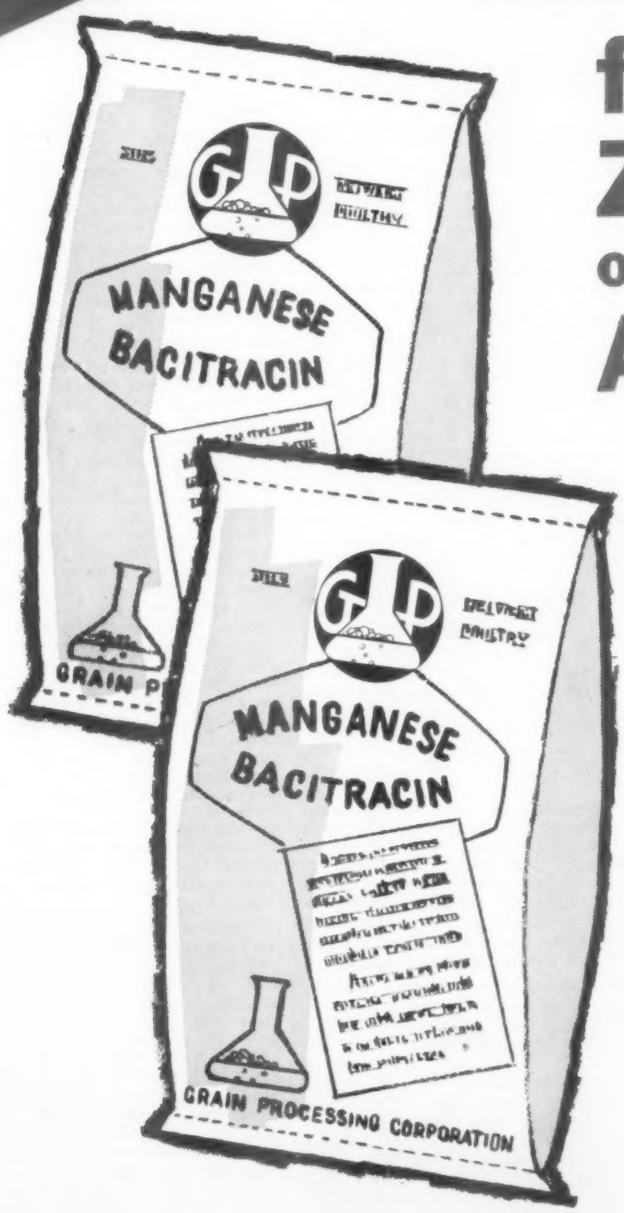
LAUREL, DEL. — Donald Dukes, 48, Laurel poultryman and feed distributor, was killed in an automobile accident Dec. 1 near Laurel. He is survived by his wife, a son, two grandchildren and a brother. The funeral was Dec. 4.

25 YEAR AWARDS—Four territory managers were recognized for serving Dr. Salsbury's Laboratories, Charles City, Iowa, for 25 years during the firm's recent annual sales meeting. Pictured with general sales manager T. W. Freeze, left, who presented the awards, are the 25 year honorees, left to right, Earl T. Landing, Orlando, Fla.; S. E. Davidson, Waco, Texas; A. F. Achilles, St. Paul, Minn., and F. H. Runchey, Goshen, Ind. Not pictured, but honored for serving Dr. Salsbury's for 20 years, was J. W. Tallent, Harrisonburg, Va.

APPROVED

MANGANESE BACITRACIN

for use with Zoalene or Amprolium



MANGANESE BACITRACIN — the *selective* antibiotic supplement that destroys harmful bacteria without harming helpful organisms — has been fully cleared by the Food and Drug Administration for use in feeds containing either Zoalene or Amprolium.

MANGANESE BACITRACIN may be used with these new Coccidiostats in poultry feeds at a range of 4 to 50 grams of Manganese Bacitracin per ton of feed. It may be used in swine feeds at 10 to 50 grams per ton.

MANGANESE BACITRACIN has been proved by test to be as stable as any similar antibiotic offered to the feed industry. Results also show greater growth response and highly improved feed efficiency. And—it's economical.

GRAIN PROCESSING CORPORATION

Part 1—Swine

A Summary of Selected Papers Presented at the American Society of Animal Production Meetings

- Zinc and Parakeratosis
- Chelation of Zinc
- Sources of Iron
- Calcium and Phosphorus
- Copper and Manganese
- Energy and Protein
- Additives
- Cooked Soybeans
- Protein and Amino Acids
- Pig Starters

By Dr. T. W. Perry
Purdue University

EDITOR'S NOTE: The American Society of Animal Production annually highlights some of the latest developments in livestock nutrition research. Papers presented at the society's annual meeting cover important findings in all phases of swine and cattle and sheep feeding. In the accompanying article, Dr. T. W. Perry, animal scientist at Purdue University, Lafayette, Ind., reviews and comments on selected swine nutrition papers presented at the meeting. Nutritionists and other feed men interested in swine nutrition will find this review helpful. In next week's Feedstuffs, Dr. Perry will review ruminant nutrition papers.

Approximately 340 papers were presented at the 53rd annual meeting of the American Society of Animal Production, held in Chicago Nov. 24 and 25.

Over 130 of the papers were concerned with animal nutrition and a total of 13 half day sessions was required to present the 134 of 139 nutrition abstracts that were submitted.

The majority of the nutrition papers was concerned with beef cattle and swine nutrition with a very evident decrease this year in number of papers concerned with sheep nutrition.

ZINC AND PARAKERATOSIS—The area of trace minerals for swine attracted a great deal of interest and a full session was devoted to the subject. Under the heading of trace minerals, the role of zinc came in for its share of discussion. Nutritionists have now known for two or three years that higher levels of zinc will alleviate the undesirable effects of high levels of calcium in swine nutrition. However, there is a great deal of speculation as to what the exact nature of this perplexing relationship is. Ritchie (Michigan) presented evidence to indicate at least a partial replacement of zinc by copper in a high calcium diet. Levels of either 125 or 250 parts per million (ppm) of copper were apparently as effective as 100 ppm of zinc when added to a ration containing a 2X level of calcium (1.3%). Based on growth rate, pigs grew as well on the copper-supplemented ration as on the zinc-supplemented ration. Both supplemented groups gained over twice as rapidly as pigs fed neither copper nor zinc (1.2 lb. vs. 0.5 lb. per day gain). However, even though copper supplementation resulted in apparent normal growth, some parakeratosis did appear and symptoms of copper toxicity were observed in the lot fed 250 ppm. A combination of zinc and copper was no better than copper alone, in terms of growth stimulation. Roberts (Wisconsin) reported results from feeding higher levels of vitamin D, along with a high calcium diet (1.4%), either in the presence or absence of 100 ppm supplemental zinc. The feeding of high calcium caused the usual symptoms of parakeratosis which were prevented by added zinc. Levels of 0, 100 or 100,000 I.U. per pound of feed had no significant effect on the incidence of parakeratosis. The lowest level of vitamin D did not produce observable rickets in the 21 week trial. Similarly, no ill effects were observed from the high level of vitamin D.

Kornegay (Michigan) fed a ration of 0.3, 0.5 or 0.7% calcium to growing pigs, with the lowest level representing just about one-half the NRC level of 0.65%. Growth and feed data indicated that either of the lower levels was satisfactory and that a level of 0.70% calcium resulted in growth depression. The addition of 60 ppm of zinc was without effect on any of the criteria studied. In one of the two trials, levels of either 100 or 1,000 I.U. of vitamin D per pound of ration were compared with no apparent difference resulting. Specific gravity and bone ash data on the 11th rib were significantly greater for the two high levels of calcium fed.

Comment—It would appear that vitamin D plays little or no role in the perplexing calcium-zinc interrelationship in swine. Furthermore, it appears that the levels of vitamin D currently being used are quite adequate and that additional levels are of no value for the growing pig.

CHELATION OF ZINC—Another angle of interest in the calcium-zinc interrelationship is a group of so-called chelating agents. The word "chelate" comes from a stem which means claw. Therefore, a chelating agent is one which grabs something else such as a bird's claw clamps to an object. There are certain natural chelating agents in feedstuffs which have an apparent affinity for zinc. Therefore, they have the ability to tie up zinc and make it unavailable to swine. Corn and soy diets are higher in the chelating compounds than are corn and milk diets. The "chelating" theory, then, helps explain why a higher level of supplemental zinc is required in a corn-soy ration than in a corn-milk ration.

Plumlee (Purdue) approached the problem of studying chelating agents through the use of radioisotope tracers to actually follow the excretion or absorption of tagged zinc when it was administered with two types of rations. On a typical corn-soy ration, addition of EDTA apparently helped to release the hold of the chelating agents present on zinc because a higher percent of the dosed zinc was absorbed into the system of the pigs given EDTA than in the case of those given no EDTA. Apparently there is not nearly as much chelating property in a corn-dried skim milk diet because absorption of labelled zinc from such a ration was quite high. However, the addition of phytic acid to the corn-milk diet resulted in poor absorption of the labelled zinc, quite typical of that from the corn-soy diet. Another feeding trial indicated a corn-soy diet may contain almost enough natural zinc if it were not tied up by chelating materials. When EDTA was added to a corn-soy ration containing 0.78% calcium, rate of gain was increased from 0.57 lb. to 0.81 lb. per day. The addition of 200 ppm zinc resulted in a gain of 0.95 lb. per day.

Oberleas (Missouri) reported somewhat similar effects of phytic acid in rats. In the Missouri research, both corn-soy and corn-milk diets were used. The addition of phytic acid to the corn-milk diet resulted in poor growth and incidence of parakeratosis typical of that observed in swine. However, the deleterious effect of the added phytic acid was largely prevented by the addition of zinc. On the corn-soy diet, containing phytic acid naturally, the addition of zinc resulted in normal growth and absence of parakeratosis. Blood analysis indicated the rats did not absorb phytic acid.

Comment—The unravelling of the chelate story appears to throw a great deal of light on the strange zinc-calcium relationship which has clouded the minds of investigators. Much of the naturally occurring phosphorus in soybeans is found in the form of phytic acid. We have assumed that such source of phosphorus is not too available to animals because of poor absorption of phytic acid. However, the chelating effect of phytic acid on zinc to make it insoluble was not shown until the very recent research. This tends to clear up the question as to why more supplemental zinc is required with a corn-soy ration than with a corn-milk ration.

SOURCES OF IRON—Ullrey (Michigan) conducted research to compare two types of injectable iron for pigs. Iron dextran proved quite superior to ferric ammonium citrate as injectable iron for baby pigs, based on weight at five weeks of age, hemoglobin and hematocrit values and mortality. Pigs injected with 150 mg. of iron as ferric ammonium citrate suffered a 47% death loss. In another phase of the research, the injection of vitamin B_{12} either alone or in combination with iron dextran did not affect growth or other detectable values.

Ferrous sulfate proved to be a superior source of supplemental iron for young pigs in data presented by Pickett (Purdue). Iron oxide, Fe_2O_3 (USP); ferrous sulfate, $FeSO_4 \cdot 2H_2O$ (USP); iron carbonate, $FeCO_3$; a crude source of ferrous sulfate (copperas), and two commercial sources of iron were compared as supplemental sources of iron to a dried skim milk semi-purified ration which contained a natural level of 15 ppm of iron. The compounds tested were added at a level to bring the total iron up to either 50 or 80 ppm. A total of three trials was conducted, and the addition of iron as ferrous sulfate—whether in the crude form or in the USP form—proved superior to the other forms of iron tested.

Comment—To really test the comparative value of sources of many nutrients, researchers often feed less than the known or recommended levels. The usually recognized optimum level of iron for swine is nearer 100 ppm. It is doubtful if the difference in the various sources of iron would be as pronounced if they had been compared at a level of 100 ppm of iron, or greater. However, at borderline levels, it is quite apparent ferrous sulfate does contain a more available source of iron.

CALCIUM AND PHOSPHORUS—Miller (Michigan) conducted research to establish the optimum level of phosphorus for baby pigs. In two trials, a range of 0.2, 0.4, 0.5, 0.6, 0.7 and 0.8% of phosphorus in a synthetic milk diet was fed. Calcium was held constant at 0.8% and zinc and vitamin D were included. Growth rate and feed consumption were depressed only in pigs receiving 0.2% phosphorus. Typical symptoms of rickets were observed in this group of pigs. (Comment: At least a part of the rachitic condition might be due to the very wide ratio of calcium to phosphorus in this group—4 to 1—since the level of calcium was held constant at 0.8%). Levels of femur ash, calcium and phosphorus, and femur breaking strength were all positively related to levels of dietary phosphorus intake. Serum inorganic phosphorus was maximum for pigs receiving 0.6% phosphorus. The authors concluded that when all criteria of measurement were considered, a level of 0.6% phosphorus appeared optimum for the baby pig.

Zimmerman (Iowa) showed that the ratio of calcium to phosphorus is quite important when levels of either one are studied. This research was designed to determine optimum levels of both calcium and phosphorus for baby pigs. Levels of 0.4, 0.5, 0.6 and 0.7% phosphorus and 0.5, 0.65, 0.8 and 0.95% calcium were studied. The ratio of calcium to phosphorus was extremely important. Ratios of calcium to phosphorus that were greater than 16:1 suppressed growth rate. Also, phosphorus at 0.4% of the ration was inadequate for maximum gains regardless of the calcium level. Increasing the phosphorus level improved feed utilization and increasing calcium level decreased the efficiency of feed utilization.

A level of 0.2% calcium in the diet of baby pigs resulted in maximum gain according to the data of Dudlye (Illinois). He reported the results of three experiments conducted to determine optimum level of calcium and, also, source of carbohydrate for pigs starting at 14 days of age. The control diet containing 0.1% calcium proved to be too low in calcium as evidenced by weak legs, impaired locomotion and seizures of calcium

WESTERN OFFICERS—Newly-elected officers of the Western Grain & Feed Association of Iowa are shown above. From left to right, they are: Bob Skinner, Des Moines, executive vice president; Glenn Swartzendruber, Wieston Grain Co., Manson, Iowa, president; Ken Ludlow, Des Moines, executive director; Adrian M. Neil, Adrian M. Neil Co., Tama, Iowa, vice president, and Keith Cummings, Specifide, Inc., Des Moines, treasurer. The officers were elected during the association's annual convention Nov. 19-21 in Des Moines.

(Turn to ANIMAL PRODUCTION, page 55)

Turkey Division of NEPPCO Opposed to Marketing Orders

NEW YORK—The executive board of the Northeastern Poultry Producers Council turkey division has voted unanimously to oppose the proposed turkey marketing orders and to testify against them at the U.S. Department of Agriculture hearing on them in Albany Dec. 12.

The vote came at a Dec. 1 meeting called by NEPPCO. Leaders of the turkey industry gathered here to express the positions of the state and local associations on the matter.

A polling of the state associations represented at the meeting and returns compiled by wire and phone indicated that eight of the 14 NEPPCO states were definitely opposed to orders, reports Richard I. Ammon of the association staff.

Opposed to the orders were the following state turkey associations: New Jersey, Pennsylvania, Maryland, Delaware, Massachusetts, New Hampshire, Vermont and Connecticut. Favoring the orders were Virginia, West Virginia and Ohio. Reports were not received from Maine, Rhode Island and New York.

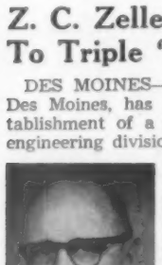
As the meeting opened, Mr. Ammon explained the operation of a hearing, told who may testify and described the method of presenting testimony to be entered in the record.

Points of opposition to the orders, according to Mr. Ammon, generally followed this trend:

The northeast is not an overproduction area, and controls would definitely be detrimental to this segment of the turkey industry. While some areas of the U.S. increased their production of all types of turkeys as much as 30%, the northeastern producers had an overall increase of only 7% over 1960, with some producers cutting back. It was also pointed out that the producer, hatcheryman and processor in the northeast is often one and the same person. Some feeling was also expressed that the orders proposed favor the integrator rather than the family farm or small operator. Most of the production in the northeast is for a specific local, fresh-killed market and commands a higher price than that of the big turkey production areas of the country.

Z. C. Zeller Named To Triple 'F' Post

DES MOINES—Triple "F" Feeds, Des Moines, has announced the establishment of a new service in its engineering division to be headed by Z. C. (Zip) Zeller as quality and equipment engineer.



Z. C. Zeller

Mr. Zeller will be responsible for quality control of Triple "F" Feed products being produced by the company's franchised manufacturers and for the inspection of plant facilities. His engineering services in planning, purchasing, contracting and construction of new installations and plant improvements will be available to the company's franchised manufacturers, dealers and customers in the eight-state area serviced by the firm.

Mr. Zeller was formerly with Foxbilt Feeds for a 10-year period as engineer and plant manager. Prior to employment with Foxbilt, Mr. Zeller worked for Sterling Manufacturing, Omaha; Glenn L. Martin Aircraft Co., Baltimore; Consolidated Aircraft Co., San Diego, and Curtiss Co., Lincoln, Neb. He attended the University of Nebraska, where he majored in engineering.

Feed Concerns Object To Railroad Petition

WASHINGTON — Valley Mills, Vicksburg, Miss.; Vicksburg (Miss.) Terminal Elevators and Central Soya Co., Inc., Ft. Wayne, Ind., are among the companies and organizations objecting to Southern Railway's petition asking the Interstate Commerce Commission to consider its proposal to lower rates on grain and grain products apart from competitive rate proposals of other railroads. These rate cut proposals are now under suspension.

Objections also have been filed with ICC by certain water carriers, the Tennessee Valley Authority and the Corporation Commission of Oklahoma.

In a joint statement, Valley Mills and Vicksburg Terminal Elevators said they believed Southern Railway could not justify the lower rates it has proposed for hauling grain and grain products from Mississippi River crossings to the South.

These protestants said, "The public must be given the opportunity to have these petitions heard as one proceeding since they are identical in most respects. The petition to sever the Southern proposal from that of the other rail carriers for purposes of hearing and decision should be denied."

Central Soya officials said Southern's petition for severance "reveals a lack of understanding of the transportation needs of the grain trade." The consequences of severing the proposed schedules, according to Central Soya, would double the time and expense of the parties involved and ICC because duplicate hearings, records, briefs and reports would be required.

"Expedition requires that the schedules be heard and decided together," Central Soya said.

Buffalo Feed Company Files for Bankruptcy

BUFFALO—Maritime Milling Co., Inc., a wholly-owned feed manufacturing and distributing subsidiary of the George Urban Milling Co., here, has filed for bankruptcy in federal court, listing debts of $5,295,967.34.

It is reported here that the firm listed no assets since they were previously assigned in a court proceeding for the benefit of creditors. Largest single creditor is the Marine Trust Company of Western New York with secured claims for loans of $2,853,-301.02.

Unsecured claims totaled $2,161,-377.53, of which $948 265.40 is due to the parent George Urban Milling Co.

The company was founded in 1916 and acquired by Urban Milling in 1957. Urban closed the Maritime mill Feb. 17, 1960, after the termination of financing of Maritime Milling by the Marine Trust Co.

The business was terminated March 4, 1960, at the time its assets were assigned to attorneys David J. Goldstein and Louis Sternberg, representing creditors.

The debts also include $247,235.13 owed the Marine Trust Co. because Maritime guaranteed to it the indebtedness of Park & Pollard, Inc., a subsidiary of Maritime. Other debts are: $23,461.04 in wages, $392.20 in federal taxes, $3,101.55 state taxes and $7,-098.87 in county and district taxes.

Officers of the company were listed as: president, George P. Urban, Jr.; vice president and secretary, Shirley M. Ditzel, and treasurer, Charles U. Banta, Williamsville, N.Y.

MISSOURI DATE CHANGED

COLUMBIA, MO.—The date of the Missouri Turkey Day has been changed, it has been announced. Originally scheduled for Feb. 1, 1962, the event will now be Jan. 16 at the Daniel Boone Hotel, Columbia. The day will include a clinic on national turkey marketing orders.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
September 30	1,126	291	625	478	57	649	1,379	1,937
October 7	1,137	268	644	494	56	573	1,355	1,667
October 14	1,058	219	600	449	66	607	1,259	1,853
October 21	953	236	432	456	18	593	1,184	1,888
October 28	1,158	257	539	455	38	571	1,514	1,907
November 4	1,165	242	701	517	65	679	1,529	2,056
November 11	1,105	244	763	569	54	684	1,695	1,911
November 18	1,148	296	741	622	53	694	1,519	2,022
November 25	1,089	238	595	635	58	662	1,482	2,101
December 2	1,146	222	795	709	35	671	1,615	2,057

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
September 30	736	247	3,029	379	5,712	156	3,376	2,156
October 7	739	245	2,979	348	5,325	151	3,388	2,001
October 14	712	273	2,889	345	5,455	157	3,372	1,944
October 21	711	245	2,738	322	5,274	174	3,204	1,906
October 28	666	176	2,761	373	5,433	198	3,278	2,138
November 4	716	263	2,816	316	5,512	201	3,474	2,123
November 11	776	353	2,877	349	5,551	205	3,476	2,153
November 18	724	374	3,014	315	5,629	224	3,397	2,206
November 25	791	380	3,048	342	5,890	240	3,529	2,166
December 2	856	341	3,193	364	6,020	260	3,493	2,285

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1961	Total 22 areas 1960
September 30	3,616	402	1,782	234	176	1,067	29,610	28,551
October 7	3,579	394	1,666	296	176	1,082	28,543	28,442
October 14	3,468	407	1,632	291	141	1,049	28,246	28,355
October 21	3,441	337	1,700	261	78	943	27,094	28,165
October 28	3,312	350	1,726	221	109	948	28,128	28,639
November 4	3,107	397	1,759	235	168	945	28,986	29,157
November 11	3,327	371	1,741	236	191	989	29,620	29,970
November 18	3,462	369	1,788	294	171	1,083	30,145	30,282
November 25	3,247	357	1,811	254	147	1,032	30,094	29,932
December 2	3,739	399	1,956	206	192	1,085	31,639	30,818

Pfizer Dedicates New Arkansas Laboratory

SPRINGDALE, ARK. — A new poultry diagnostic laboratory was dedicated at Springdale Dec. 5 by Chas. Pfizer & Co., Inc., with several hundred persons attending an afternoon open house.

Visitors from Springdale and surrounding counties, including scientists and state government leaders, toured the new diagnostic equipment and facilities in the all-brick and stone structure. The lab is located just off U.S. Highway 71, north of Springdale at the city limits. It contains 3,600 sq. ft.

At the open house, Pfizer agricultural division representatives from the firm's main headquarters in New York described for visitors the work of the new laboratory, and Pfizer veterinarians conducted demonstrations and explained how the lab will function in making prompt and accurate diagnoses of poultry disease problems that in past years have cut sharply into profits of Arkansas poultrymen.

J. J. Thompson, Pfizer vice president and general manager of its agricultural division, at an evening program, said it is his hope the new facility will make a sizeable contribution to reducing Arkansas' share of the $240 million annual loss through poultry disease devastation.

Dr. Hilmer Jones, head of the department of veterinary medicine for Pfizer, explained functions of the laboratory with regard to serving poultry and egg producers. He noted that the heavy concentration of broilers in northwestern Arkansas placed greater emphasis than ever before on the need for prompt, accurate diagnosis in the fight against diseases.

The new laboratory will be ever mindful, Dr. Jones said, of its role in preventing disease outbreaks, and will offer a rapid but thorough autopsy and diagnostic service, providing specific recommendations for effective disease control.

Dr. Robert Keirs, an experienced veterinary pathologist, is director of the lab. He was a practicing poultry pathologist as well as a consultant to several poultry groups prior to joining Pfizer recently. He will be assisted by trained technicians.

K. Max Isaacs, Hales & Hunter Executive, Dies

CHICAGO — K. Max Isaacs, 31, head of Hales & Hunter Co.'s Pioneer dairy feeds department, died Nov. 23 of Hodgkins disease.

K. Max Isaacs

Mr. Isaacs was graduated from Purdue University with a master of science degree and joined Hales & Hunter Co. in 1954 as an associate biologist. He later served as a livestock nutritionist, and was promoted to manager of Pioneer dairy feeds department early in 1961.

NEW DIAGNOSTIC LAB—The new Chas. Pfizer & Co., Inc., diagnostic laboratory pictured here was dedicated this past week. Located at Springdale, Ark., diagnostic services, including autopsy, diagnosis, conferences and recommendations for disease treatment and prevention, will be offered free to Arkansas broiler and egg producers.

RALSTON PURINA COMPANY AND CONSOLIDATED SUBSIDIARIES

Statement of Earnings and Earnings Invested in the Business

	Year ended Sept. 30, 1961	1960
SALES OF PRODUCTS AND OTHER INCOME:		
Net sales	$581,042,216	$527,815,565
Other income, net	3,665,835	2,557,088
	584,708,051	530,372,653
COST, EXPENSES AND OTHER CHARGES:		
Materials and operating expenses	467,388,455	414,789,090
Administrative, research, distribution and general expenses	74,896,203	65,597,780
Depreciation	7,532,135	6,701,160
Retirement plan expenses	2,210,740	2,519,469
Interest	1,920,768	1,499,106
Taxes on income, including provision for deferred income taxes of $1,065,000 in 1961 and $1,185,000 in 1960	21,409,499	20,846,239
	565,357,800	511,952,844
	19,350,251	18,419,809
Equity in earnings of 50%-owned companies	557,557	495,374
Earnings for the year	19,907,808	18,915,183
Cash dividends declared ($1.40 per share in 1961; $1.20 per share in 1960)	9,181,485	7,813,700
Earnings in excess of dividends	10,726,323	11,101,483
Earnings invested in the business at beginning of year	117,341,720	106,240,237
Earnings invested in the business at end of year	$128,068,043	$117,341,720

BALANCE SHEET

Liabilities

	Sept. 30, 1961	1960
CURRENT LIABILITIES:		
Accounts payable	$ 17,573,521	$ 14,619,378
Dividend payable	2,299,423	1,953,672
Accrued expenses	7,292,471	5,804,053
Taxes on income	13,701,550	11,904,722
Total current liabilities	40,866,965	34,281,825
LONG-TERM DEBT:		
3¼% sinking fund debentures due 1971 (exclusive of $1,550,000 in treasury in 1961 and $1,300,000 in 1960)	11,350,000	12,200,000
3⅛% sinking fund debentures due 1977 (exclusive of $923,000 in treasury in 1961 and $892,000 in 1960)	12,477,000	12,908,000
	23,827,000	25,108,000
RESERVES:		
Self-insurance	546,934	542,518
Deferred income taxes	4,400,000	3,335,000
	4,946,934	3,877,518
SHAREHOLDERS' EQUITY:		
Cumulative preferred stock of $100 par value per share. Authorized 250,000 shares, none outstanding		
Common stock of $5 par value per share. Authorized 8,000,000 shares (130,535 shares reserved under option agreements at Sept. 30, 1961). Issued and outstanding, 1961—6,569,780 shares; 1960—6,512,239 shares	32,848,900	32,561,195
Premium received on capital stock in excess of par value (including $986,519 during year ended Sept. 30, 1961)	5,784,927	4,798,408
	38,633,827	37,359,603
Earnings invested in the business (at Sept. 30, 1961, $33,539,203 was restricted as to the payment of cash dividends under indentures relating to long-term debt)	128,068,043	117,341,720
Total shareholders' equity	166,701,870	154,701,323
Total	$236,342,769	$217,968,666

Assets

	Sept. 30, 1961	1960
CURRENT ASSETS:		
Cash	$ 5,717,630	$ 8,177,794
Marketable securities, at cost which approximates market	.....	6,615,166
Accounts receivable, less allowance for doubtful accounts	67,338,882	54,677,190
Advances on purchases of materials	1,680,815	2,334,247
Inventories (at approximate cost not in excess of market):		
Raw materials and packing supplies	33,902,896	28,708,778
Finished products	11,183,201	10,132,843
Prepaid expenses	2,211,600	1,927,632
Total current assets	122,035,024	112,573,650
INVESTMENTS IN 50%-OWNED COMPANIES: (At underlying net asset value)	4,404,997	3,790,819
PLANT AND EQUIPMENT (at cost):		
Land	2,918,989	2,322,601
Buildings and equipment, less accumulated depreciation $56,186,245, 1961; $49,493,468, 1960	102,356,833	96,306,815
	105,275,822	98,629,416
Other assets and deferred charges	4,626,925	2,974,780
Trademarks, patents and goodwill	1	1
Total	$236,342,769	$217,968,666

PURINA

(Continued from page 1)

time highs after a slow start in the first quarter. Sales momentum gained at mid-year and accelerated through the second half of the year to set new records.

The report cited "unsatisfactory returns" on the broiler and turkey feed part of the Chow business but said that "emphasis on going after diversified, full-line Chow volume and on building and strengthening our dealer distribution has helped overcome these setbacks."

Donald Danforth, board chairman, pointed out that, with growth of Purina's international operations, the international division's results are included in the consolidated statement for the first time.

Profits for the U.S. and Canada in the 1961 fiscal year were $18,709,990, or $2.85 per share, compared with $18,000,234 and $2.76 the previous year. For the international division, 1961 profits were $1,197,818, or 18¢ per share, compared with $914,949, or 14¢, the previous year. Total profits were $19,907,808, or $3.03 per share, in 1961, compared with $18,915,183, or $2.80 per share, in 1960.

Profits for the July-September quarter were termed disappointing, due entirely to inventory write-downs and adjustments on Sept. 30.

Stock Split

Mr. Danforth pointed out that at the annual meeting Dec. 15, shareholders will be asked to vote on increasing authorized common stock from 8 million to 20 million shares. Subject to such approval, it is the directors' intention to effect a 2-for-1 stock split on shares held as of Nov. 21; to increase the quarterly dividend rate to 20¢ per share on the new stock, effective March 12, 1962; and to apply to have Purina stock listed on the New York Stock Exchange effective in January.

"The above moves," he said, "express more eloquently than words the confidence directors and management feel in the future of our company."

"Food Is Our Business"

The theme of the annual report this year is "Food Is Our Business," and the report points out the role of all company divisions in food production. For example, the report notes that Purina Chows "are in reality raw materials used by farmers, ranchers and growers to manufacture protein foods." The international division, sanitation division, soybean division and grain merchandising division also make contributions to production of food through animal agriculture, it is pointed out. These are in addition to the Ralston division and its grocery products.

"All six diversified divisions," the report said, "add up to one big business—food."

In this connection, Purina stresses the importance of formula feeds, with the feed industry the largest industry serving agriculture, in dramatic improvements in production of protein foods. And the report includes charts and illustrations to show how modern feeds have helped bring production of better foods, more efficiently, making food a better buy for the consumer.

Looking toward the future, Mr. Danforth said that "it seems apparent that our company will tend to become still more diversified in the food field, which is our business." He cited as one step in that direction the company's further integration in poultry. (Also see accompanying story.)

Growth Cited

While the feed industry generally has had its problems in recent years, the continued growth of Purina is noted. Mr. Danforth, in his letter to stockholders, pointed out that the earnings increase in 1961 is the fourth consecutive gain.

And further growth is predicted. Said Raymond E. Rowland, president: "Every division of our company has its definite goal for the year ahead. More important, they have carefully worked out plans for attaining their goal. Our motto is: Maximum Growth with Safety."

Here, in part, is what the annual report had to say about operations of various Purina divisions:

Chow Division: After referring to the gains in tonnage and dollar volume, the report said:

"The price problems of the broiler and turkey industries continue to be a real concern. Production exceeding demand has burdened the markets, creating a distress price situation which has adversely affected all segments of the industries. Purina recognized this distress situation in its pricing policies on broiler and turkey Chows—resulting in an unsatisfactory return on this part of our business.

"Fortunately, a coordinated marketing program which placed emphasis on going after diversified, full-line Chow volume and on building and strengthening our dealer distribution has helped overcome these setbacks.

"The drive for diversified, full-line volume based on the total potential in each dealer market was launched at the beginning of the fiscal year by six regional dealer conventions. It was followed up by drives for more personal feeder sales contacts and advertising localized to area potential and concentrated on the best economic opportunities for the year.

"Nearly 600 new dealers joined forces with Purina during 1960-61. Many of these were in markets where previously there were no Purina dealers.

"It is particularly significant that many established Purina dealers are expanding their services in order to better fill the needs and earn the business of today's business farmer and rancher. New in this field is a 'packaged' Check-R-Mix dealer mill—designed by Purina engineers and now prefabricated to provide Purina dealers in grain areas with the most efficient physical facilities to serve their customers.

"Newsworthy from Chow Research was the 'Built-in Roughage' program for feedlot cattle which 'caught fire' with cattle feeders, large and small, this past year. The same trend of complete ration feeding is gaining wide acceptance in lamb feeding and is in the process of being further researched for dairy cows and riding horses.

"To better serve dealers and feeders, Purina constructed numerous new bulk delivery facilities strategically located throughout the country. Four of our older plants at Kansas City, St. Louis, Ft. Worth and Los Angeles were completely modernized for more efficient production. A distribution warehouse was opened at Dubuque, Iowa, and a new plant is under construction at Russellville, Ark.

"Re-emphasis on basic marketing fundamentals has developed a sales enthusiasm and momentum which promise to carry over into the new fiscal year."

Sanitation Division: In the past year, the report pointed out, the Purina sanitation division set a new sales record and racked up the largest dollar gain (23%) for any year on record. The sanitation products line has grown from 22 products in 1950 to 80 in 1961. Dollar volume of the products almost quadrupled in the 10-year period.

The key to the marketing success of the products was said to be new product development which keeps new and better products coming. These, it was said, are backed by aggressive marketing tools.

International Division: The report said that this division, comparatively new, is not yet reaching full profit potential but that growth in sales and acceptance are "spectacular." Chow sales in Mexico, Colombia and Venezuela were reported up nearly 30%. New plants will be completed in the coming year in Colombia and Venezuela. A new plant has been approved for Argentina. "Tremendous gains" are also being made with Purina's European partners in France, Germany and Italy, the report said. Tonnage in Germany grew 100%. Two new plants were built in France.

Soybean Division: Purina, one of the largest processors of oilseeds in the world, last year processed 50 million bushels of beans in its nine sol-

(Turn to PURINA, page 85)

FINANCIAL HIGHLIGHTS

Year ended Sept. 30	1961	Per Share	1960	Per Share
Net sales	$581,042,216		$527,815,565	
Net earnings	19,907,808	$ 3.03	18,915,183	$ 2.90
Cash dividends declared	9,181,485	1.40	7,813,700	1.20
Income taxes	21,409,499	3.26	20,846,239	3.20
Shareholders' equity	166,701,870	25.37	154,701,323	23.76
Wages and employee benefits	55,790,236		54,762,180	
Working capital	81,168,059		78,291,825	
Plant and equipment (net)	105,275,822		98,629,416	
Capital expenditures	13,378,043		15,931,247	
Current ratio	—2.99:1—		—3.28:1—	
Number of shareholders	8,297		7,748	

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The proof? We have just completed calculations on the results of *six* recent tests conducted in different parts of the country involving over 14,000 birds! The summary below highlights the pertinent facts and figures. See for yourself why Baciferm makes such good business sense (and dollars) in *your* broiler feeds. These results confirm the data from scores of tests run during the past several years.

	NUMBER OF BIRDS	EXTRA PROFIT PER THOUSAND BIRDS OVER CONTROL (4 GRAMS ZINC BACITRACIN PER TON)
CSC TEST #23	524	$15.34
COLLEGE TEST #58	964	$13.95
COLLEGE TEST #60	300	$ 9.50
FEED MANUFACTURER'S TEST #78	12,000	$ 6.55
COLLEGE TEST #82	600	$21.85
COLLEGE TEST #83	150	$22.58

BASIS: market price of broilers 16¢ per lb.; feed cost 4½¢ per lb.; zinc bacitracin 7¢ per gram.

Doesn't it look like Baciferm is the buy for you? Baciferm's the buy for more and more feed manufacturers for both low and high level use. It's the economical antibiotic supplement for poultry and swine feeds. It contains the selectively-active antibiotic *zinc* bacitracin made exclusively by CSC under Patent No. 2,809,892. Baciferm's selective action kills dangerous bacteria fast but lets beneficial bacteria go right on producing vitamins and other valuable growth factors. College tests show that Baciferm gives full value in stimulating growth and reducing mortality. And – *zinc* bacitracin has the antibiotic stability manufacturers require.

One other thing: for stress and disease Baciferm can be added to each ton of *your* feed at $2 to $4 less than the cost of the tetracyclines.

ANIMAL NUTRITION DEPARTMENT

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Important Role for Feed Trade Seen in Changing, Dynamic Beef Cattle Industry

By ROBERT BROWN
Feedstuffs Special Correspondent

WEST END, GRAND BAHAMA—A prediction that the feed industry will not suffer from newer methods of tenderizing beef than feeding and breeding was made before the Florida Nutrition Conference and the Florida Feed Assn. meeting.

With consumers wanting tenderness more than any other factor, cattle producers are faced with this problem of leaner and more uniformly tender beef. In the future, breeding, feeding and management programs will be aimed at the production of carcasses carrying less waste fat with a higher ratio of lean to bone.

Dr. A. Z. Palmer, assistant meat scientist of the Florida Agricultural Experiment Station at Gainesville, pointed out the fact that industry can inject for tenderness more economically than the old methods of feeding and breeding.

"While there may or may not be problems involved in commercial application of the process, all evidence indicates that the tenderizing effect is very pronounced," he said in describing the use of proteolytic enzymes to tenderize by ante-mortem injection, which is patented by one of the nation's leading packers.

Heretofore, beef cattle have been fed not only for weight gains but for the purpose of making them more tender.

"There is much evidence accumulating at the present time which casts doubt on the validity of the present concept that marbling contributes to beef tenderness. It has been shown that tenderness is an inheritable trait and that marbling accounts for less than 2% of the variation in beef tenderness. The idea that you can feed for tenderness is not standing the test of modern day research. The idea of breeding for tenderness, while only recently shown to be a possibility, is already passed by the discovery of injecting proteolytic enzymes for beef tenderness. Why attempt to breed for tenderness or even think you can feed for tenderness when industry can inject for tenderness more economically?" Dr. Palmer said.

Cattle will be fed to a lighter slaughter weight in the interest of producing leaner carcasses. Cattle will be fed to lower carcass quality grades, he said.

Feeding-management programs in the future are not likely to be altered greatly because a continued grain surplus will counteract consumer demand for lean beef.

"In the distant future, however, at that time when our population increases to the point where we no longer have a grain surplus, cattle feeding will change rapidly. We are looking into a time of rapid change in the beef cattle industry. In the future, I feel that we will emphasize the maximum utilization of roughage in ruminants. Researchers will have developed ways and means of producing higher protein and more digestible grasses, hays and silage. Nonprotein nitrogen will be used more extensively than now. Energy requirements will be supplied to an increasing degree by the use of animal fats and vegetable oils. There will be a material increase in the use of growth promotants—different and perhaps more economical than today's stilbestrol—different and perhaps better antibiotics than today's Aureomycin and Terramycin," he said.

"The feed industry stands to gain more tonnage than it loses, and only needs to see the real opportunity to play an important role in a changing and dynamic beef cattle industry to the U.S.," he concluded.

LYSINE IN LAYER DIETS—While much of the conference was devoted to cattle since Florida is an important cattle state, attention was also devoted to poultry, including two papers by Dr. J. R. Couch, of Texas.

Dr. Laurent Michaud of Merck, Sharp & Dohme research laboratories, pointed out that effects of lysine as an additive in layer rations had never really been thoroughly investigated until only a year or so ago, partly due to high prices of lysine and also to time honored approach to applied amino acid research.

Now that lysine is less expensive, more research is taking place. It is being rediscovered that proteins are only as good as their amino acid make-up. Therefore, the word protein is losing much of its significance and is being displaced by the concept of amino acid patterns. Investigators are now looking at and evaluating the relationships of amino acids to each other and to energy rather than simply that of protein to energy.

As a result of three experiments, it seems justified to suggest that pure, or at least non-protein, amino acids may soon have a place in modern layer diets as our knowledge of their role and interrelations advances. When this time comes, we shall surely make the kind of progress in the feeding of layers as was brought about by the development of pure vitamins, he said.

EFFECTS OF CLIMATE ON DAIRY CATTLE—The most critical effect of hot weather on productivity of cattle seems to result from a reduction in feed intake, and utilization of palatable, quality feedstuffs will help improve nutrient intake and any improvement made in environmental comfort will contribute to maintenance of appetite. Dr. Sidney P. Marshall, dairy husbandman, Florida Agricultural Experiment Station, said that factors that affect loss of productive response during summer are: degree of heat stress, quantity and quality of available nutrients and productive level (nutrient requirement) of the animal.

HIGH-SALT RATION—Cattle, sheep, swine and poultry have shown a high tolerance for large amounts of salt provided they were accustomed to it gradually and had free access to water, Dr. G. Bohstedt, emeritus professor of animal husbandry, University of Wisconsin, said. Matter of fact, it may be shocking to some people the amount of salt they may take safely. It can be used in large proportion with a protein supplement and can be self-fed successfully for limiting the consumption of a supplement to a desired level. Mixtures containing large proportions of salt are best fed in the form of a meal rather than as pellets. Ample water is an essential. High-salt rations have greatly reduced and even completely prevented incidence of urinary calculi.

WHAT'S NEW IN SWINE FEEDING?—Several studies are in progress in which a high level of antibiotic is being fed 3 days prior to farrowing and for 7 to 10 days after farrowing to determine if this procedure will improve sow performance, Dr. H. D. Wallace of the Florida station said.

He pointed out that Missouri work-

(Turn to BEEF CATTLE, page 79)

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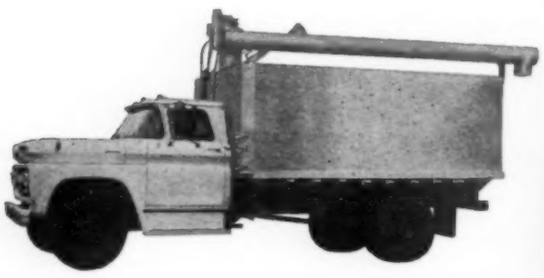

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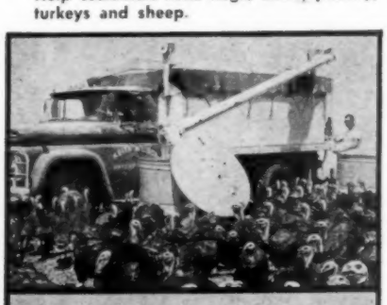

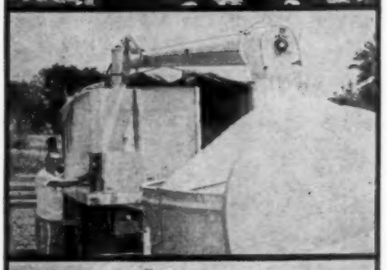

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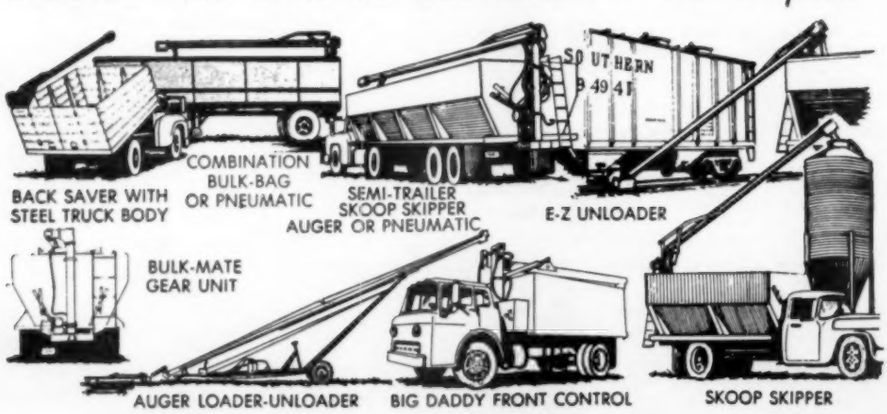

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EGG ANYONE? — Sixty thousand eggs (5,000 doz.) were in this great heap, part of which is shown in this photo. The pile of eggs was the result when Ponte Duero Farm near Valladolid, Sprain, ran short on egg cases but forgot to tell the DeKalb laying flock owner. It takes exceptional eggshell strength to withstand the pressure on the eggs, according to DeKalb.

Farm Bureau Plans Poultry Conference

CHICAGO—The current series of hearings on turkey marketing orders being held by the U.S. Department of Agriculture gives added importance to a poultry conference planned in conjunction with the American Farm Bureau Federation annual meeting here Dec. 10-14, Charles B. Shuman, president of AFBF, said.

The poultry conference will be one of several commodity conferences held in conjunction with the AFBF annual meeting. The poultry conference will be held Dec. 11 at 1:15 p.m. in the Morrison Hotel, the announcement said.

Poultry experts from the East and Midwest and the AFBF staff will discuss poultry prospects. One part of the program will include a panel discussion on experiences in control of agriculture. The situation in turkey marketing—and the expected referendum to be called by the administration in late December or in early 1962—undoubtedly will be discussed, it was pointed out.

How Farm Bureau and commodity organizations can work together will be discussed by these panel members: Richard I. Ammon, executive secretary, Northeastern Poultry Producers Council, Trenton, N.J.; Harold M. Williams, president, Institute of American Poultry Industries, Chicago, and Don M. Turnbull, executive secretary, American Poultry and Hatchery Federation, Kansas City.

Participating AFBF staff members include Kenneth Hood and A. William Jasper of the commodity division staff and Marvin McLain of the legislative staff.

FOUNDATION TRUSTEE

SKOKIE, ILL.—Thomas M. Ware, president of International Minerals & Chemical Corp., has been named by President Kennedy to serve on the board of trustees of the U.S. Freedom from Hunger Foundation. Heading the foundation are Harry S. Truman, Mrs. Woodrow Wilson and Mrs. Eleanor Roosevelt.

Enzymes that work are here now!

NOPGRO® WORKS

See page 15

Kansas Veterinary-Nutrition Meeting Plans Completed

MANHATTAN, KANSAS — Plans have been completed for the Kansas Veterinary-Nutrition Conference to be held Dec. 16 at Kansas State University, Manhattan.

The meeting will start at 11:30 a.m. with a luncheon in the main cafeteria. First speaker on the program, starting at 1 p.m., will be Dr. Frank Jordan, practicing veterinarian from Abilene. His topic will be "Cementing Our Relationships."

A panel discussion on "Solving the Problems Better—Together" will be moderated by Dr. Fayne Oberst, Kansas State University, president of the Kansas Veterinary Medical Assn. Participants will be Dr. Jordan; Dr. George Watson, practicing veterinarian; Kenneth Anderson, a feeder; Jack Grubb, Naturich Feeds, Abilene, and Don Geiser, Honeggers' & Co., Topeka.

A special feature will be the premier showing of "The Power of Positive Working," a new slide and sound story to be shown at schools of veterinary medicine, schools of agriculture and to other groups. This story has been prepared by the Midwest Veterinary-Nutrition Council and will be introduced by Dr. James Bailey, Walnut Grove Products Co., Inc., Atlantic, Iowa, chairman of the council. Lloyd Larson, executive vice president of the Midwest Feed Manufacturers Assn., will also present remarks.

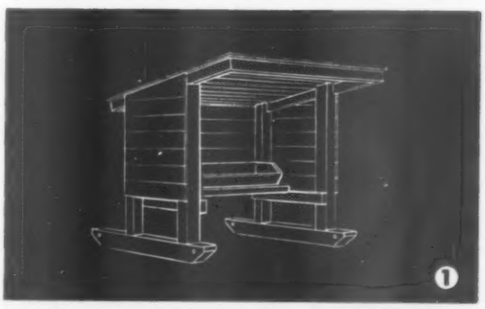
Following a discussion period, the meeting will adjourn to the Gillette Hotel where a cocktail hour and a buffet dinner will be held. The conclusion of the day is a double-header basketball game featuring Kansas University vs. Marquette and Kansas State vs. St. John's.

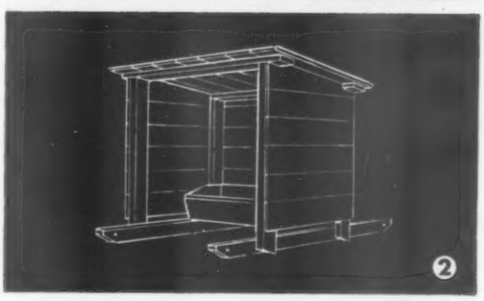
New Facilities at Molasses Terminals

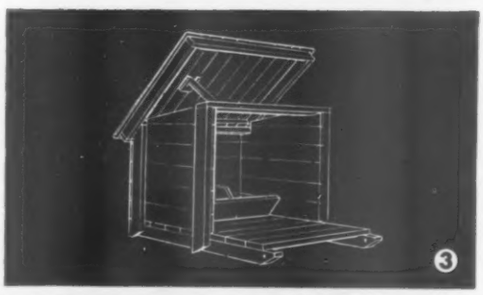
TACOMA, WASH. — The Pacific Molasses Co., San Francisco, has recently added new facilities at its northwest terminals. This was pointed out in connection with the announcement of the appointment of a new field representative for the Pacific Northwest. (Feedstuffs, Dec. 2.)

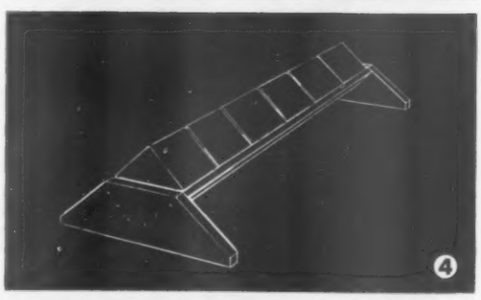
The terminals at Tacoma, Seattle and Portland have been equipped to mix molasses and phosphoric acid "for ease in handling and for nutritional purposes," officials noted.

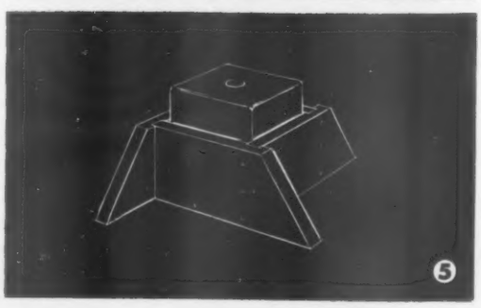
The new representative is Robert B. Prescott of Tacoma, who will work with Winslow W. Hall, western sales manager. Mr. Prescott is an animal husbandry graduate of Washington State University and has had experience at his family's Montana ranch in all phases of livestock feeding. He was with a major northwest feed manufacturer before joining Pacific Molasses.











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These safe, simple and long-lasting feeding stations were designed by Morton four years ago. Since then, thousands have been built from these plans, distributed through Vo-Ag teachers and County Agents. Now we're offering them—*through you*—to the farmers and stockmen of America!

These plans will be advertised in full-page ads in leading farm magazines. But your customers will have to come to you to get them! Contact your Morton Representative for your free supply now—or write Morton Salt Company, 110 N. Wacker Drive, Chicago 6, Illinois.

1 CATTLE FEEDER Has divided mineral box that can be removed for cleaning. Can be moved on sturdy skids to any part of range or pasture.

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3 HOG FEEDER Wide roof overhang keeps minerals dry. Roof is hinged and braced for easy cleaning.

4 MULTIPLE BLOCK FEEDER Keeps salt and minerals off the damp ground, prevents "wet bottom" block waste.

5 BLOCK HOLDER Eliminates dangerous metal stake block holders—build this block box from a single length of 2 x 10!

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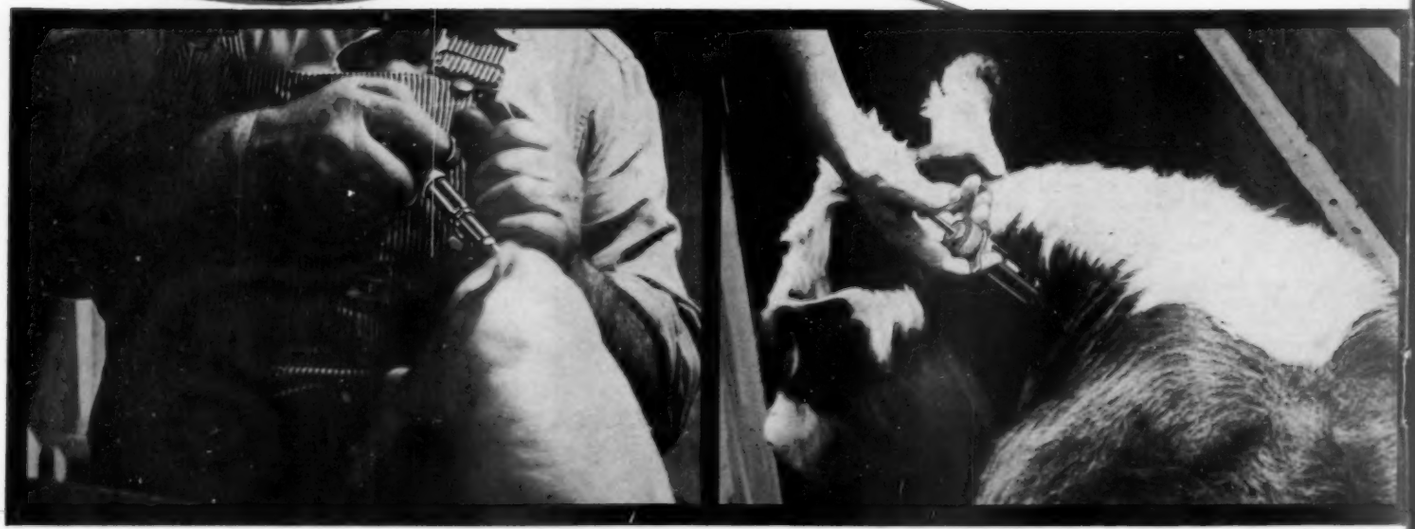
IN DAIRY CATTLE Pneumonia, Mastitis*, Foot Rot.

IN BEEF CATTLE Shipping Fever, Foot Rot and Pneumonia.



Treatment of baby pigs with GALLIMYCIN Injectable gives them disease-fighting support during the period of early stresses. In fighting baby pig scours, practical farmers report excellent results using 1-cc for each 3 to 5 lb. baby pig.

Now, they're using GALLIMYCIN Injectable *first!* From feedlots come reports of excellent results with GALLIMYCIN Injectable in the treatment of shipping fever, pneumonia and foot rot... even in cases where nothing else worked!

If you're a feedman, a salesman or a dealer, you're interested in successful livestock operations. Here's a new, effective antibiotic that belongs in every livestock health program.

GALLIMYCIN Injectable is new, but proven! In the broiler industry, the effectiveness of GALLIMYCIN in the treatment of certain respiratory problems – especially chronic respiratory disease – is a by-word. GALLIMYCIN Injectable is a boon to commercial poultry operators. Every month, two to three *million* baby chicks are treated with GALLIMYCIN Injectable. Poultry growers follow through on this program for just one reason – it pays. It helps to protect their profits.

Now, GALLIMYCIN Injectable belongs to livestock producers, too. After two years of tests proving its value for beef cattle, dairy cattle, hogs and baby pigs, fast-acting GALLIMYCIN Injectable enters the field of livestock diseases.

GALLIMYCIN Injectable *is* fast – effective blood levels of erythromycin are achieved in just one hour. It's effective – just one dose daily is sufficient treatment. And it's safe, too – no serious side effects to worry about.

* Milk drawn during treatment and within 48 hours after the last GALLIMYCIN injection must not be used for human consumption.

GALLIMYCIN Injectable treats mastitis, pneumonia and foot rot in dairy cattle... treats the whole ani.nal. Rapid absorption of the drug means that it goes to work within one hour after injection. Each 100-cc bottle contains enough antibiotic for up to 6 cow treatments.

Hog men have used GALLIMYCIN Injectable on baby pigs in cases of scours, pneumonia and other respiratory diseases. Results have been excellent. GALLIMYCIN aids in the management of leptospirosis in sows at farrowing time. It helps hogs all through life in their battle against the tough "flu" complex, rhinitis and bronchitis.

Dairymen have had outstanding success with GALLIMYCIN Injectable in cases of mastitis, pneumonia and foot rot. In mastitis, they like the way GALLIMYCIN Injectable treats the cow as well as the quarter.

Cattlemen who have used GALLIMYCIN Injectable generally agree that it does much more than is claimed for it. Beef cattle afflicted with shipping fever have been returned to full feed within three days by a single low-level dose of GALLIMYCIN Injectable. In cases of foot rot, dramatic recoveries due to GALLIMYCIN Injectable have been reported. In one such instance, 13 Hereford steers afflicted with foot rot were treated with GALLIMYCIN Injectable. Within 24 hours, all but three were recovering. These three steers were again treated on the second day, and on the third day, one steer received a third treatment. All 13 steers quickly made complete recoveries.

Livestock men have called GALLIMYCIN the antibiotic of choice in fighting certain livestock diseases. Hog growers, cattlemen and dairymen among your customers will soon be insisting on GALLIMYCIN Injectable in their livestock-health programs.

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Letters to the Editor

FEED FIRM STATES STAND ON CONTROLS

Spartanburg, S.C.

To the Editor:

Ever since mid-summer, much attention has been focused on whether this country should or should not adopt national marketing agreements or marketing orders relating to turkeys and poultry. Because the turkey industry at the time thought it might want them, the Agricultural Act of 1961 was passed with an enabling clause including possible consideration with respect to **turkeys**—but not a similar clause relating to broilers or commercial layers.

Feedstuffs and other news media have given extensive publicity to the two proposed turkey orders, hearings which are now taking place, special meetings called for the purpose of explaining, selling, debating or expressing approval or disapproval of orders, and have had timely editorial comment.

USDA Promotion

Members of the U.S. Department of Agriculture have travelled widely in the U.S., appeared at many meetings and have tried to be most persuasive in an effort to sell or force acceptance of the idea of government-and-industry controls. "Opportunities Available for Self-Help Stabilization Under Federal Marketing Orders" has been the name of the package offered. Dr. James Ralph, assistant secretary of agriculture, has been chief "medicine man" in promoting this new socialistic medication for the turkey and poultry industries—even **before** enabling legislation has been written into law by Congress with respect to broilers and/or commercial layers.

Within the past two weeks, two such meetings have been held at Atlanta and Columbia where USDA's objective was to ease, sell or drive producers of the area into agreement with the agreements. Resistance—slow at first to come into the open—has made its appearance. Harvey Green, free private enterprise proponent par excellence, in a most eloquent speech—probably the best anyone has ever given in favor of "free poultry enterprise"—more than held his own in debate with Dr. Ralph's substitute at Columbia.

Difference of Preference

From all this and much more, it is obvious there are some in this land who seem to prefer to live under the comforting shelter of a control umbrella and receive the largesse of a benign government and industry committee, but we also know that there are others who do not want this—but instead prefer to continue to live "in the land of the free and the home of the brave."

Believing it only right and proper that Spartan (Grain & Milling Co.) should declare its stand on something as important as whether a dynamic but temporarily a i l i n g industry should go behind the control curtain, Spartan affirms its faith in the traditional right of the American farmer to produce as he wishes, to succeed in great measure if he is efficient—and if inefficient, even to fail. Above all, we think the best law under which he and this land can operate is the greatest natural economic law of all—the law of supply and demand.

We believe government-and-industry controls on a nationwide basis would be uneconomic, unmanageable, not to the best interest of the efficient farmer and would be productive of confusion, dishonesty, evasion, red tape, inefficiency, favoritism and black marketing.

"Socialism Has Not Worked"

No political administration has yet proved beyond question that it can "manage" a nationwide agricultural economy—here or abroad. Socialism has not worked. Nor has communism. We do not believe that bureaucrats in Washington or even well-intentioned industry committees can always know what is best for the farmer, the taxpayer, the city consumer, an industry or the country as a whole.

Marketing orders tend to freeze an economy, limit new entrance, block expansion of efficient producers, tie an industry to its present sites of operation, remove maximum incentive for improvement.

Halting agricultural change and progress in this country in 1941 or 1951 would not have been in our best interest. Halting it in any respect in 1961 or 1962 will not be.

Left to its own devices, free farming of any description regulates and corrects itself . . . and generally very promptly unless there are unusual mitigating circumstances — such as possible pending government intervention—which delay the correction.

"Clamoring for Control"

Certain segments of the turkey industry—at first in a very definite minority—have been clamoring for controlled marketing for more than two years. The movement had its origin and strongest support at first in the far west where growers were not in best position for serving big eastern markets and where some limited-

EDITOR'S NOTE: This letter, which tells why a southeastern feed milling concern is against control programs in poultry and animal agriculture, is from a bulletin sent by Spartan Grain & Mill Co., Spartanburg, S.C., to Feedstuffs and other persons.

Feedstuffs' readers are invited to submit their opinions on agricultural control mechanisms or any other subjects of feed industry concern as a letter to the editor for use in this column.

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Data processing has enabled Sprout-Waldron to manufacture standard component parts in quantity and provide stock shipments — with the savings passed on to you! Now, most air handling requirements can be ordered without costly surveys or special engineering help.
Our new bulletin shows all standardized components, gives capacities, horsepower requirements — complete instructions on how to easily, quickly select and order without delay or waiting for outside assistance.
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scope marketing orders have been in effect on other crops.

Reacting in double fashion to a very profitable turkey-raising year in 1960 and the considerable possibility of imposition of control quotas or procedures with a new socialistically-minded administration in power in Washington, turkey raisers greedily upped the 1961 turkey crop 26%—a disastrously burdensome increase which market buyers promptly seized upon so that turkeys in this 1961 holiday season are going to consumers' tables ready to eat at prices per pound considered little more than necessary for profitable live turkey marketing. So the law of supply and demand worked in 1961 just as it had in the better year of 1960—and will work in any year in the future if not politically blocked.

Objections Listed

Specifically, the following are a few aspects of the proposed control procedures we think are dangerous, impractical, freedom-depriving or highly questionable:

—The members of the industry board, administrative committee and any employee regulating the industry would be subject to removal by the secretary of agriculture.

—Each and every decision would be subject to the continuing right of the secretary to disapprove and render null and void.

—Each hatchery would be regulated as to the quantity of turkey eggs to be set.

—Each processor would be regulated as to the quantity of turkeys to be marketed and quantity to be set aside in storage if a surplus was determined.

—There is no provision stating who would supply the capital for storing set-aside turkeys.

—Numerous records and reports would be required.

—Employees of the secretary and the committee would have access to any premises where turkeys were handled and to any and all records relating thereto.

—Pro-rata shares of the cost of administration would be levied directly on the industry.

—There would seem to be opportunity for favoritism in allotting poults to growers or in failing to do so.

—There would appear to be possibilities of lots of trouble on poult pricing and a likely probability that farm-by-farm production controls would be necessary eventually.

—It is not expected that unusually favorable prices could result for producers because of the overpowering influence of consumers politically. If highly favorable prices were permitted to develop, there could be consumer switch to other meats, loss of export trade, etc.

—Efficient operators would not enjoy freedom to expand. High-cost producers would most likely receive some protection from competition.

—There could or would be discrimination against new producers or new areas desiring to enter the turkey business.

—Some producers, hatcheries and processors would have excess capacity if production were reduced.

—Implications would go far beyond the turkey industry. There could be effort to control all poultry operations and animal agriculture (and maybe even allied industries).

As our president, Mr. Burly Fretwell, has recently said: "The contemplated controls would take all the thrill out of trying to pursue a business. There would be arbitrary assumption of power and dictatorial authority. Liberty would be usurped. Giving authority to enter one's premises at any time to inspect one's records could only be frustrating. It would seem that anyone voting for such controls would be voting away his own self-respect."

So we take our stand **against** control programs in poultry and animal agriculture.

D. E. Huntington,
Spartan Grain & Mill Co.

Mississippi Agricultural Experiment Station:

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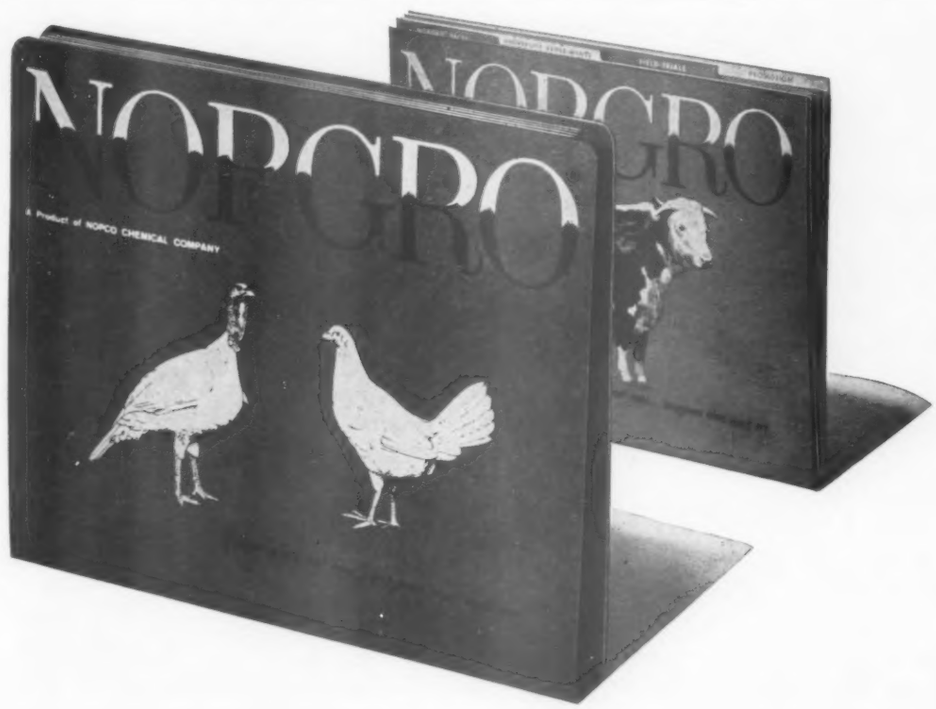

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1 Turkey Breeder Hens (Broad Breasted Bronze)

Duration	54 days
Number of birds	838 (also 838 controls)
Diet	high energy (primary source was milo)
Extra profit per 1000 birds per day	$7.38
Extra profit per ton of feed	$20.63

2 Commercial Layers (S.C.W.L. Hyline)

Duration	77 days
Number of birds	2601 (2594 controls)
Diet	high energy mash (60% yellow corn meal)
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Report Covers Grain Marketing Changes

WASHINGTON—Changes in marketing channels for grain from 1939 to 1959 are described in a report issued by the U.S. Department of Agriculture. The study, conducted by USDA's economic research service, includes the marketing of wheat and the five major feed grains—corn, oats, barley, sorghum grain, and rye.

Two kinds of changes were found to have occurred. One kind was in market organization and definitions; although much grain continued to flow through the same channels, its movements were reported in a different way. For example, when some country elevators became larger and took on new functions, they were reclassified as subterminal elevators.

The other kind of change was the creation of new channels. One of these is the Commodity Credit Corp., which began to buy large quantities of grain in the mid-1950's and has continued to do so.

Over three times as much grain was processed and manufactured into prepared animal feeds in 1959 as in 1939. This increase resulted in new channels to some areas of the U.S. and increased volumes through old channels.

Wheat exports increased from 1.1 million tons in 1939 to 13.3 million tons in 1959. Exports of feed grains increased from 1.7 million tons in 1939 to 11.9 million tons in 1959. The opening of the St. Lawrence Seaway created a new channel of distribution for exported grain.

Individual flow charts for wheat and the five feed grains showing the 1959 movement through the market channels also are presented in this report.

A free copy of the report, "Changing Grain Market Channels," ERS-39, may be obtained from the Division of Information, Agricultural Economics, U.S. Department of Agriculture, Washington 25, D.C.

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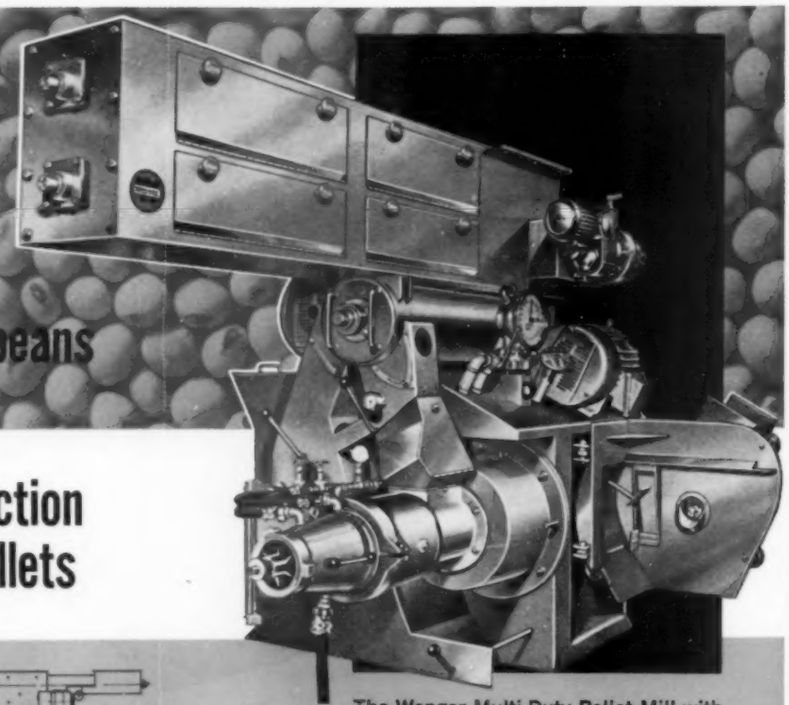
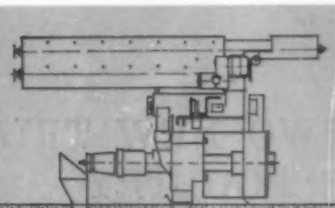
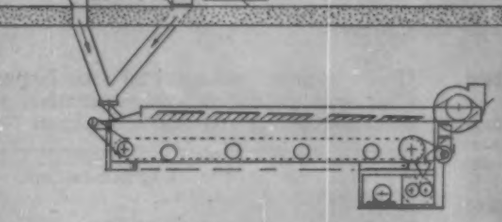
Continuous Cooking of Ground Whole Soybeans



Plus Production of Hard Pellets



The Wenger Multi-Duty Pellet Mill with steam jacketed preconditioning feeder and industry proven Wenger Expansion Pellet Extruder-Cooker.



Both on a single pelleting system—the Wenger Multi-Duty Mill equipped with Wenger Expansion Pellet Extruder-Cooker. Wenger Horizontal Pellet Cooler and Crumble Roll for cooling and granulation of cooked whole soy beans and for cooling and crumbling hard pellets.

Feeding tests have shown that swine rations made with ground whole soy beans, cooked on a Wenger Multi-Duty Pellet Mill, will produce faster daily rates of gain, and with increased feed efficiency than an otherwise identical ration using solvent extracted soy bean meal as the source of protein. It follows that this ration will be equally important in poultry feeding.

FOR FEED MILLS IN SOY PRODUCING AREAS

Now for the first time

1. Your own processing of cooked soy beans, *plus*
2. The finest hard pellet mill on a single economical processing system — The Wenger Multi-Duty! Other models available for those mills desiring to cook soy without the production of hard pellets.

Write ***TODAY*** *for details—another significant Wenger development for the betterment of the feed industry.*

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Higher Sales, Profit Reported by Staley

DECATUR, ILL. — A. E. Staley Mfg. Co., Decatur, has reported increases in net profit and net sales for the fiscal year ended Sept. 30, 1961, compared with the previous year.

Net profit was $5,707,469, compared with $4,520,834. Net sales were $165,656,181, compared with $155,697,017. The board of directors of the corn, soybean and chemical processing concern Nov. 14 voted a regular quarterly dividend of 25¢, an extra dividend of 35¢ and a 2% stock dividend on common shares. Similar payments were made a year ago.

The company's annual report states the "soybean division feed and vegetable oil products showed significant sales gains, with strong domestic and foreign demand for soybean meal and oil and a sharp rise in the price of soybeans.

"Soybean milling profit margins declined further, however, as the excess milling capacity in the industry competed for the bean supply. A record new crop is ample for the coming year, but may not be reflected in improved milling margins."

Hart-Carter Acquires Shanzer Mfg. Co.

MINNEAPOLIS — Shanzer Manufacturing Co., San Francisco, has sold its dryer operations to Hart-Carter Co., Peoria, Ill., and, according to P. E. Henseler, president of the Hart-Carter Co., Shanzer operations will be transferred to the Day Co., Minneapolis.

A. C. Bredesen

This division will be responsible for all sales and service for Shanzer dryers, bucket elevators, manlifts and Arid-Aire dryers. The Day Co. and Hart-Carter recently merged.

A. C. Bredesen has been appointed general manager of the newly created dryer division of the Day Co. Ralph E. Holmquist will be in charge of all service for Shanzer and Arid-Aire dryers. General offices and service facilities for the dryer division will be in Minneapolis to provide more convenient service to the majority of owners of these dryers, the announcement of the purchase stated.

Shanzer dryers will now be manufactured, sold and serviced by the Day Co. Day will also continue to manufacture, sell and service Arid-Aire dryers.

The combination of manufacturing operations will result in improved production methods and economies, according to the announcement. An expanded research and development program is also being planned by the Day Co., it was stated.

As a result of the transaction, the Day Co. now becomes the largest producer of drying equipment for the grain, feed and food processing industries in the U.S. Day will now offer a complete range of models to cover all types of applications and grain dryers in sizes from 200 bu. per hour to 6,000 bu. per hour.

Hart-Carter Co. manufactures farm machinery components and has been active in the farm implement field for 72 years. Hart-Carter Co.'s main offices are in Peoria, Ill., and it operates plants in Peoria and Gridley, Ill., Webster City, Iowa, and also has 50% interest in the Simon-Carter Co., Minneapolis.

The Day Co.'s main office is in Minneapolis with plant operations in Minneapolis. Ft. Worth, and Toronto and Ft. William, Ontario.

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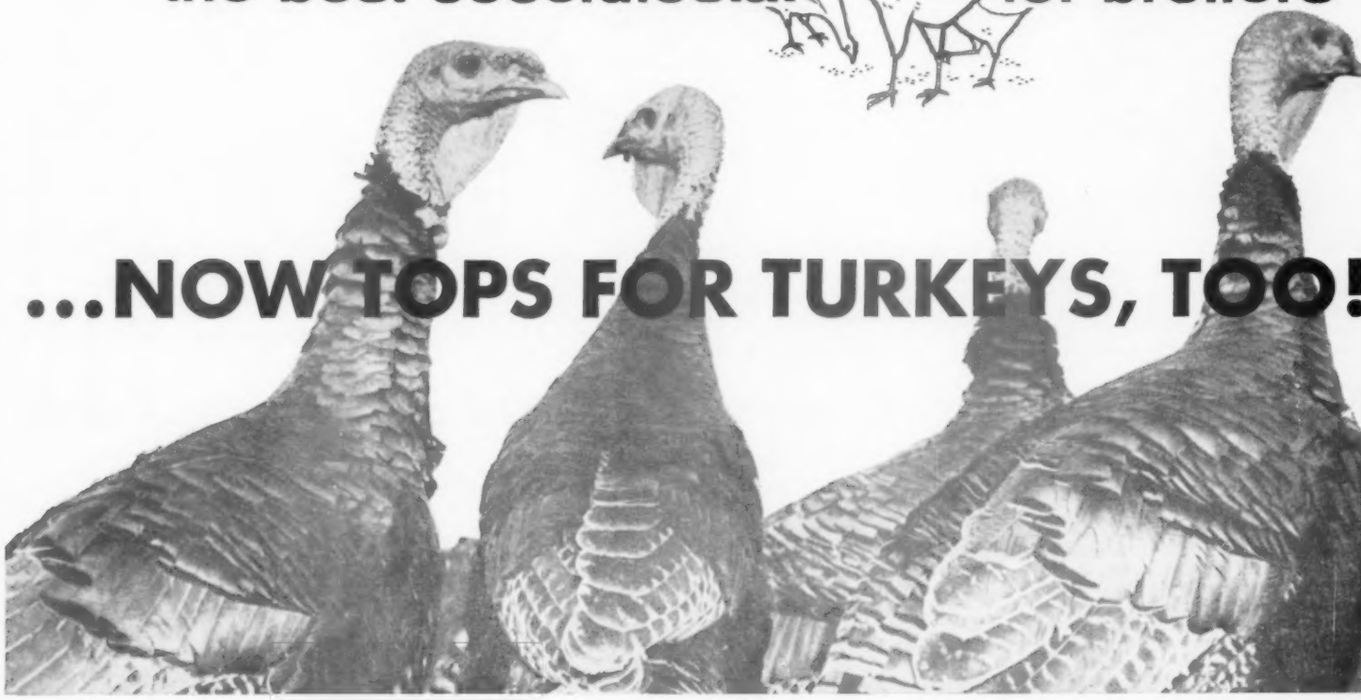

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Already considered the greatest coccidiostat for broilers, AMPROL has proved equally effective for turkeys! These chief advantages make AMPROL the coccidiostat of choice with your turkey-grower customers:

AMPROL is highly effective against the three economically important coccidial species: *Eimeria adenoeides, E. gallopavonis* and *E. meleagrimitis.*

AMPROL is especially effective against mixed infections which are so common...and costly... in turkey flocks.

AMPROL allows satisfactory weight gains, with very favorable feed conversion ratios.

AMPROL, at a use-level of 0.0125%, helps prevent coccidiosis in a unique way by depriving coccidia of the thiamine they need to live. However, at this level AMPROL will usually permit the establishment of a *sound immunity.*

AMPROL permits you to stock only one coccidiostat for both broilers and turkeys.

AMPROL gives full coccidiostatic activity... coccidia have not been shown to develop resistance to this coccidiostat, yet it is well tolerated at many times the recommended use-level and is nontoxic to farm animals.

AMPROL has excellent blending properties... is easy to use in your mill.

Add AMPROL to your feeds to give your turkey-grower customers the most coxy protection for their money!

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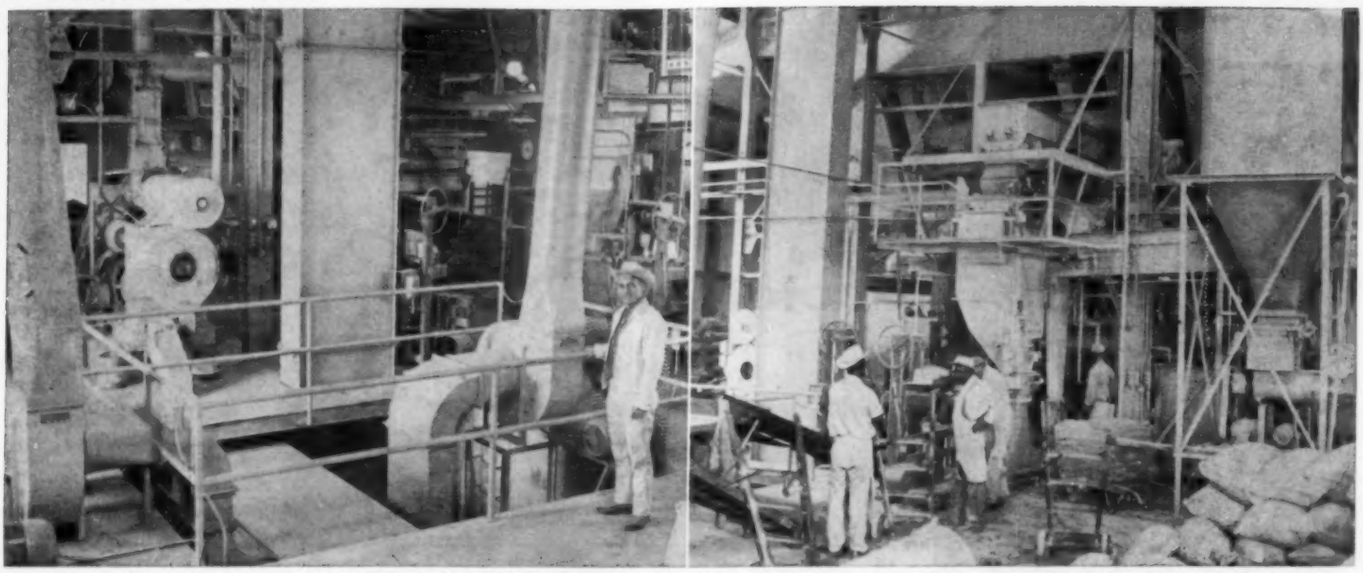


Relative positioning of feed manufacturing equipment in the new feed mill just completed by Sugarland Industries, Inc., at Sugar Land, Texas, is shown in these pictures. The photo at left shows Leroy Mills, mill superintendent, standing beside protective railing which surrounds the pellet cooler (California) pit. On one side of the cooler is the air intake fan and on the other is the air exhaust fan. In left background is the mill's 100 h.p. California pellet mill. The second photo shows mill employees sacking feeds. The mill has two sacking machines (Richardson). At present all of the mill's feed output is sacked, but management plans to move into bulk delivery with the help of its first bulk feed truck (Pamco).

New Mill Helps Texas Concern Stay Ahead of Fast-Paced Trends

By Fred E. Tunks
Feedstuffs News Editor

In keeping with its progressive character, Sugarland Industries, Inc., of Sugar Land, Texas, is leading rather than following livestock feeding trends in the Southwest. Staying ahead of fast-moving agricultural developments of this region in general and of southeastern Texas in particular is an accomplishment generated by long-range strategy.

Sugar Land, commuting distance southwest of Houston and 50-60 miles northwest of the Gulf Coast cities of Galveston, Texas City and Freeport, is in traditional dairy, beef cow-and-calf, rice, hay and cotton country. Relatively high rainfall and hot to mild temperatures the year around have made it so.

But, say, a decade henceforth the animal agriculture profile of this Gulf area may be almost unrecognizable. Sugarland Industries knows changes are on the way. And, as a step toward preparing for these changes, the firm has built a new 100-ton feed mill just outside Sugar Land.

This is already a strong dairy region, but it's bound to get stronger in this respect because of rapid population growth and ample supplies of roughage.

Cow-and-calf beef herds are not disappearing but beef-conscious Texans are convinced that the area can support feedlots for finishing cattle as well as grazing land for raising feeder cattle. Why not feed the beef we eat, Texans ask.

Producers of the area are easing into hog production, and this trend alone may turn out to be one of the most dramatic feeding developments. Texans also ask: Why not feed the pork we eat?

Egg production, mostly involving caged layers at present, is growing. And it's anybody's guess as to whether broiler growing could mushroom from an insignificant position to one of relative importance in this area.

Crop Changes

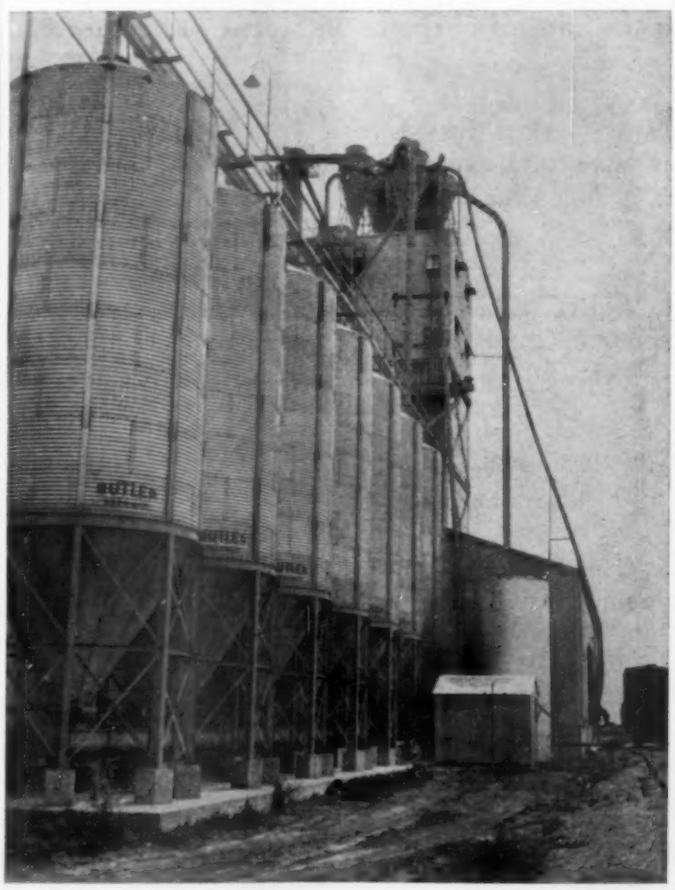
Accompanying this metamorphosis and expansion of animal agriculture in southeastern Texas are parallel changes in crop emphasis. As beef cattle, dairy cattle, swine and poultry feeding demands increase, the need for greater production of milo, corn and other feed grains also advances. This order isn't so tough to fill for milo, but the relatively wet growing season of this area makes corn-growing a difficult proposition. So most ration formulations are geared to extensive use of milo and roughage.

Cotton, the number one crop of this coastal region, has been a source of disappointment for many over the past several years. The crop has been habitually hit at harvest time by heavy rains and this year damage was worse than ever because of Hurricane Carla.

Replaces Old Mill

J. M. (Jake) Schrum, vice president for agriculture, says the new feed mill will enable Sugarland Industries to stay ahead of formula feed demands in its trade area for a long time. The new mill, rated at 100 tons in an 8-hour shift, replaces an obsolete plant in downtown Sugar Land which produced only about 25 tons of commercial feed a day.

Right now the new plant is being operated one shift a day. Production can be increased to something like 250 tons a day with the addition of two more shifts—and this may become a necessity in the near future as Sugarland Industries' expansion program moves along.



Standing in a row alongside railroad spur tracks and behind new Sugarland Industries feed mill are seven storage tanks (Butler), each with a capacity of 70 tons of milo.

The new feed mill is the focal point of one of Sugarland Industries' most promising agricultural enterprises. And it requires a great deal of busy Mr. Schrum's management attention, which also must be directed toward Sugarland's cotton, alfalfa and seed growing and processing interests and toward the company's livestock and crop production enterprises.

Sugarland grows cotton, corn, alfalfa and other crops and grazes cattle on about 14,000 acres in the Sugar Land area. In addition to its new feed mill, it has an alfalfa dehydrating plant, a cotton gin and seed processing facilities.

Diversified Sugarland Industries, whose president is Thomas L. James, also owns and operates a modern shopping center; a John Deere farm equipment franchise; Sugarland Motor Co., which has a Chevrolet franchise; Sugar Land Telephone Co., which serves Sugar Land and surrounding area, and Residential Venice, Inc., developer of Venetian Estates, a Sugar Land subdivision of $20,000 and up homes fronting on a lake.

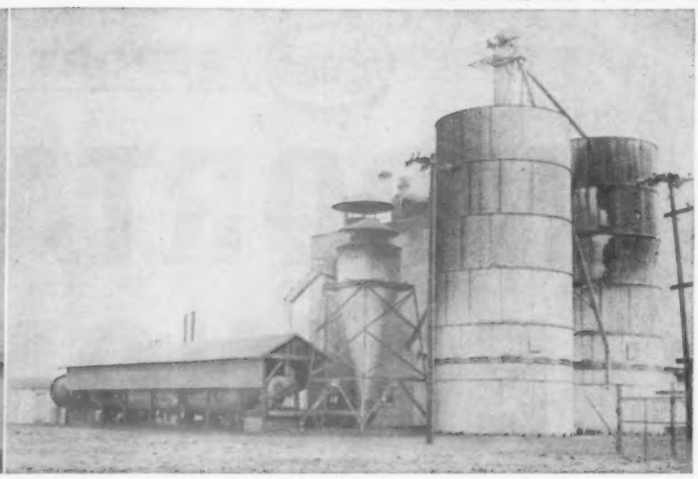
Mason Briscoe II is manager of Sugarland Industries' new feed mill. Under him are Leroy Mills, mill superintendent; three salesmen, including Gifford Horn, sales manager; the automatic and semi-automatic controls operator, Ervin Pursley; three truck drivers and the general work force which handles unloading, loading, sacking, maintenance, housekeeping and other chores. Mill hands are members of United Sugar Workers, an AFL-CIO affiliated union, which also represents sugar mill workers in Sugar Land.

Mr. Briscoe's assistant in the mill office is Mrs. Ervin Pursley, bookkeeper.

40 Different Feeds

The new feed mill is now producing about 40 different "Mix-Rite" brand feeds. These various formulations include 5 feedlot feeds, which differ according to roughage content; 10 dairy cow and calf rations; starter, grower, fattener and sow rations for swine, and 2 layer rations.

Some custom or special rations are formulated, but none of these involve grain brought to the mill by the farmer. Some corn, milo and oth-



Sugarland Industries has prepared for livestock feeding developments along the Gulf Coast of Texas by building a new feed mill near Sugar Land. This mill (first picture above) is rated at 100 tons in 8 hours. Ingredient receiving area is enclosed by the shed-like roof on the right side of the mill. In the foreground at right is the truck weighing station and office. Small building at far left houses steam generating equipment for a pelleting machine. The second photo above is of Sugarland Industries' alfalfa dehydrating plant. Production capacity of this single-drum plant is about 1½ tons per hour.

er grains are bought from nearby producers, however.

Nearly all of the rations produced in the mill are "complete." Concentrate sales comprise a very low percentage of total volume because most customers, including dairymen, feedlot operators, ranchers and small farmers, don't have the grain or roughage to add. Even dairymen don't put up their own hay. Only a few feeders buy ingredients from Sugarland Industries and mix them with supplement "at home."

The only premixing done in the new mill is the manufacture of a Mix-Rite brand of mineral mix—salt, bone meal, trace minerals and calcium carbonate. This is done in a Kelly Duplex mixer moved from the old plant to the new one. Other premixes are obtained from a supplier.

Nearly 100% of the feeds delivered now from the mill are in bags. But this percentage is expected to change as Sugarland Industries increases its services to large customers, such as feedlot operators. The company's first bulk feed truck (Pamco) was recently purchased.

All of the mill's production is sold direct to customers.

Mill Flow

The new mill was designed by a Houston architectural firm, Cameron Fairchild & Associates. Equipment was installed by Worth Enterprises of Ft. Worth. And the steel (American) mill building was erected by Candoo Construction Co. of Houston.

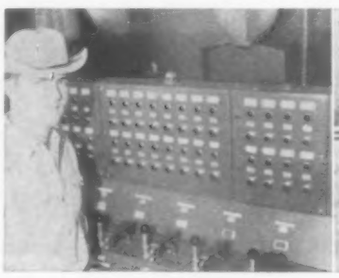
Grain—mostly milo, but some shelled corn, ground ear corn and oats—and other ingredients—cottonseed meal, peanut hulls, alfalfa pellets—are unloaded from trucks or tractor-drawn trailers in a covered, two-alley receiving area on one side of the mill. These ingredients are either dumped from the carrier into a receiving pit at a rate of up to 25 tons an hour or drawn into a pneumatic system (Sprout-Waldron Pneu-Vac) at 15-30 tons an hour. When the pit is used, large semi-trailer trucks are unloaded with a power shovel and small trucks are lifted to an unloading position with a hoist.

Outside the mill's one-story office building is a 50-ton capacity scale (Toledo) used for weighing trucks.

The pneumatic ingredient handling system carries incoming grains from the receiving area into seven outside storage tanks (Butler). These tanks, standing in a row behind the mill along a rail siding, are of identical size, each large enough to store 70 tons of milo.

From the receiving pit, other ingredients are moved upward to an overhead screw conveyor that runs the length of a 140-ft.-long flat storage building behind the feed mill and parallel to the row of storage tanks. This overhead conveyor can be set to dump cottonseed meal, ground ear corn, peanut hulls, cottonseed hulls and other ingredients in piles on the flat storage structure's cement floor. These ingredients are removed from storage by a screw conveyor installed

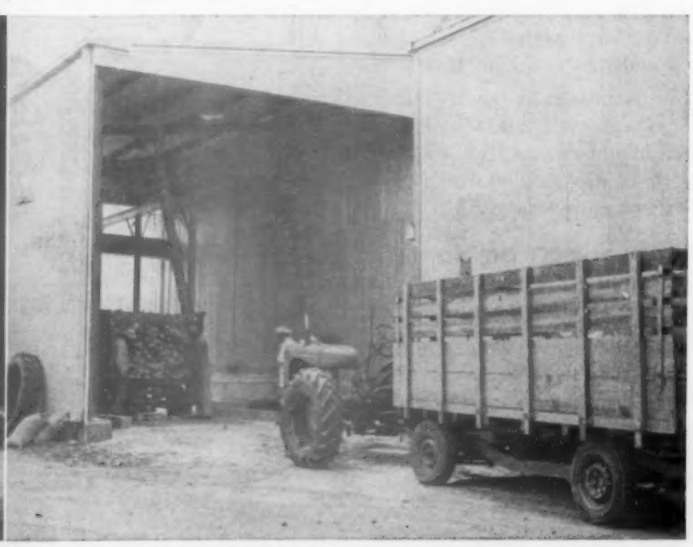
(Turn to NEW MILL, page 71)



Ervin Pursley (first photo) operates new mill's automatic and semi-automatic controls. Mason Briscoe II (second photo), mill manager, stands in front of separate building enclosing Sellers boiler which generates steam for pellet mill.

The informal gathering above includes, from left: Mason Briscoe II, mill manager; J. M. Schrum, Sugarland Industries' vice president for agriculture; Leroy Mills, mill superintendent, and Gifford Horn, feed sales manager.

Some ingredients, including cottonseed meal, ground ear corn, peanut hulls and cottonseed hulls, are stored in a 140-ft.-long flat storage building, the interior of which is shown in the first picture below. Ingredients are conveyed into this building or into storage bins from the receiving area shown in the second photo of the picture panel below.



ELANCO **REPORT ON HYGROMIX**

IMPORTANT NEW ECONOMIC AID TO POULTRYMEN

Hygromix kills worms of all ages and sizes. Stops them from producing eggs. Controls worm infections in laying, broiler, replacement flocks. Helps increase feed efficiency, improve flock health.

Hygromix, a new concept in worm control, was first introduced to the feed industry four years ago. At that time, additional research was being conducted to determine if the active component of Hygromix (Hygromycin B) would be useful for control of worms in all classes of livestock or poultry.

The result: Hygromix for poultry.

Hygromix kills and controls three important worm parasites of chickens . . . safely, automatically.

HYGROMIX . . . ONLY METHOD WHICH STOPS WORM EGG PRODUCTION

Hygromix breaks the life cycle of roundworms, cecal worms, and capillaria worms. Besides killing the adult worm before it has a chance to inflict heavy internal damage, Hygromix also stops worm egg production and reduces the total number of worm eggs that would otherwise infest all poultry premises. The cecal worm egg, for example, can survive for a period of eight months in the soil under natural climatic conditions.

Now, Hygromix for poultry opens up another important service and selling opportunity for feed manufacturers. It is the first, and only, worm-control method which is effective both as a preventive and a cure.

LET'S LOOK AT THE ACTUAL DAMAGE CAUSED BY THESE THREE PARASITES

Briefly, the cecal worm causes general unthriftiness, and in young birds death may result from heavy infection. The cecal worm is also the carrier of blackhead disease. Capillaria worms cause unthriftiness, weakness, loss of weight, and loss of egg production in layers. Large roundworms retard growth of young birds and lower production of laying flocks.

Just how much "dollar damage" is done by worms directly or indirectly, no one seems to know—but Drs. Card, Barger, and Pomeroy, noted poultry scientists, state: "Diseases and parasites continue to exact an annual toll from the poultry industry which has been estimated at more than $250,000,000." (Source: Fifth Edition, "Diseases and Parasites of Poultry.")

The very nature of the poultry industry today has opened the door for even heavier losses. It is an economic necessity for the poultryman to raise large numbers of birds in close, confined areas—and these crowded conditions provide ideal environments for worm eggs, infection, reinfection.

Hygromix helps to lick this problem by providing continuous, automatic worm control during its recommended feeding period.

ADVANTAGES OF HYGROMIX TO POULTRYMEN

Many of the benefits of using feeds with Hygromix are the same for egg producers, replacement growers and broiler operators. This list gives you the complete story at a glance.

HYGROMIX FOR POULTRY:

- helps to improve feed efficiency
- provides way to keep litter free of worm eggs
- safe, economical, easy to use
- birds stay on feed—there's no setback or shock
- helps to prevent blackhead disease by killing and controlling its main carrier, the cecal worm
- big aid to sanitation—lessens chance of next brood being infected—birds are free of worms when ready for laying house
- keeps birds on range free of worms
- helps remove stress conditions and improves flock health.

Commercial poultrymen are concentrating their efforts more and more on sound management and sanitation methods to increase feed efficiency and lower costs of production. Hygromix will help them do this.

ADVANTAGES OF HYGROMIX TO FEED MANUFACTURERS

Volume, volume, more volume seems to be the answer for poultrymen to make a profit today. With this volume, the risk of worm damage, infectious diseases, and the resulting losses becomes that much greater. Up to now, little could be done to solve the poultry-parasite problem.

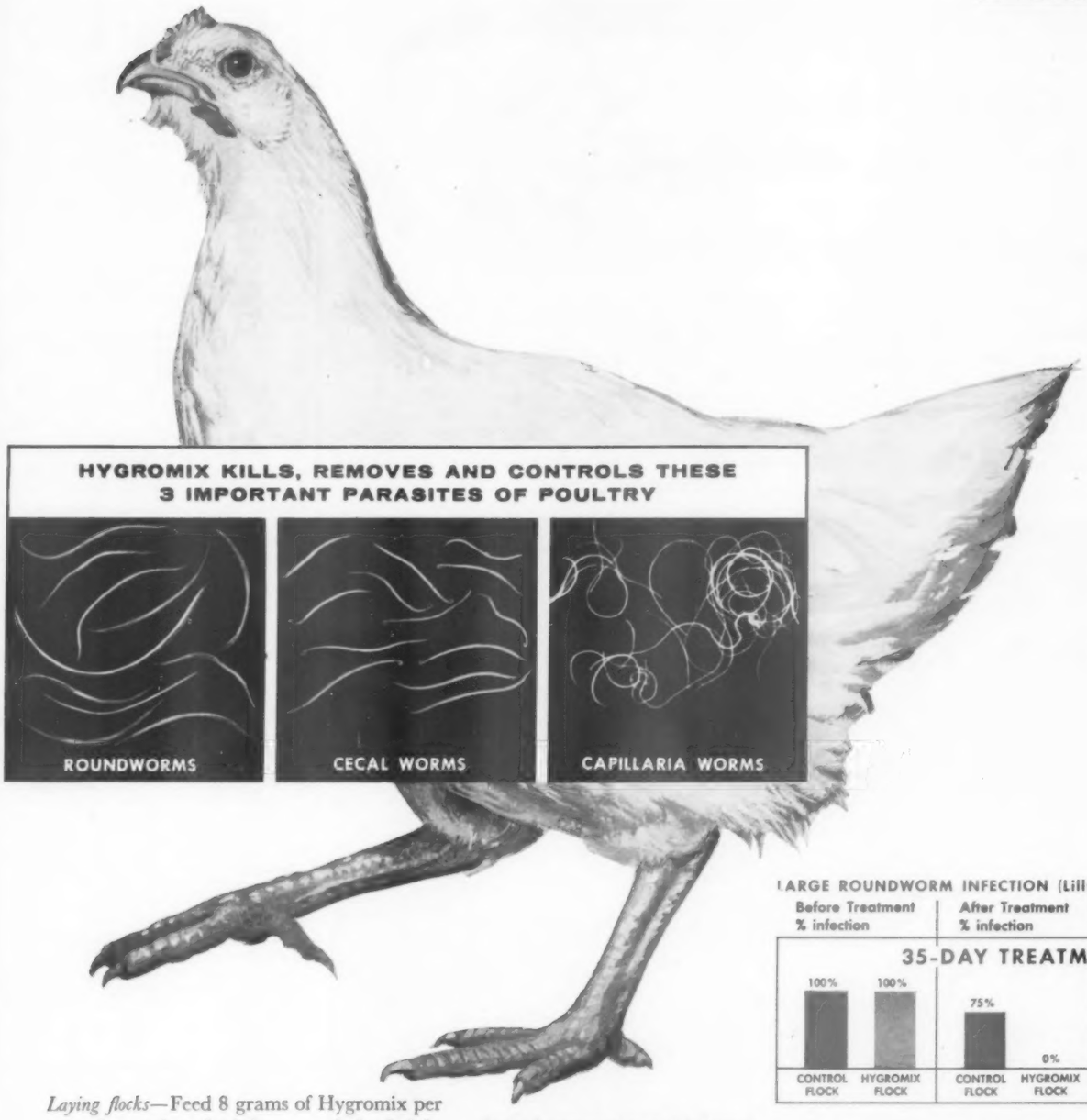
Now, Hygromix not only kills and removes the three most important parasites of poultry but actually breaks the life cycle of these worms—*greatly reduces chances for reinfection.* Now, you can offer poultrymen a brand-new tool to help them increase feed efficiency and lower cost of production.

With Hygromix, your sales and dealer organization can offer commercial poultrymen this newest advance in poultry feeding and build poultry-feed tonnage.

Hygromix is a finely divided and free-flowing premix, designed for accurate and efficient mixing by the feed manufacturer into his complete poultry rations. Hygromix may also be included in your poultry concentrates that are mixed with grain.

HOW TO USE FEEDS WITH HYGROMIX TO PROTECT POULTRY AGAINST WORM DAMAGE

Replacement flocks—Feed 8 grams of Hygromix per ton of complete feed for a period of eight weeks prior to placing birds in clean laying house. Repeat if necessary.



Laying flocks—Feed 8 grams of Hygromix per ton of complete feed for a period of eight weeks. Repeat if necessary.

Broilers—Feed 8 grams of Hygromix per ton of complete feed for the first eight weeks.

HOW TO QUALIFY

Elanco Products Company is now ready to help you comply with regulations covering the use of Hygromix in your poultry feeds. For instructions, write Elanco Products Company . . . or see your Elanco Representative. The benefits of Hygromix will be explained to poultrymen in the coming months. Act now and be ready.

* * *

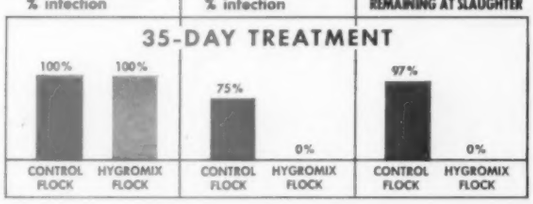
Only proved facts about Hygromix are presented on these pages. Tests are still being conducted at many research centers and preliminary findings indicate that Hygromix will provide benefits beyond those already proved.

These additional benefits will be reported in trade journals and farm magazines as soon as they are thoroughly proved and tested under practical farm conditions.

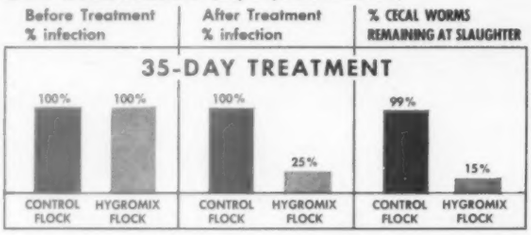
Results of worm-control tests at Lilly Research Center: These charts show how feed with Hygromix quickly reduced the number of roundworms and cecal worms, as well as killing the worms. In these experiments, birds with known worm infestation were split into two comparable groups. The control flock received a high-quality poultry ration. The test flock received the same ration with Hygromix. Daily worm counts in the manure were made and recorded during the 35-day test. At the end of the test, all birds were slaughtered and complete worm counts performed. These are shown by "percentage of worms remaining at slaughter."

Results of worm-control test by Dr. M. N. Frazier, Extension Veterinarian, Poultry Department of Animal Disease, University of Connecticut, Storrs, Connecticut: This chart shows how feed with Hygromix quickly reduced the number of capillaria worms, as well as killing them. In this experiment, a total of 1,970 White Leghorns were fed Hygromix mixed in the mash at the rate of 8 grams per ton for a period of 8 weeks; 793 White Leghorns served as controls. One percent of each lot was slaughtered every two weeks throughout the trial and the presence of capillaria worms was recorded.

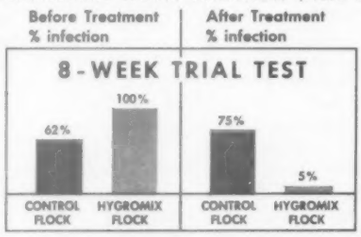
LARGE ROUNDWORM INFECTION (Lilly experiment No. 56)



CECAL WORM INFECTION (Lilly experiment No. 56)



CAPILLARIA WORM INFECTION (Field Trial No. 1 - Frazier)



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JOE BROOKS

BY AL P. NELSON

It's How We Use Our Time That Counts

The employees of Joe Brooks Mill at Hansen's Creek and those of the Endeavor branch held their first sales training meeting in the big knotty pine trimmed basement community room in Joe's new farm store.

The room had tile floor, some nice rural paintings on the wall and on a couple of easels were signs giving case records of hog raising and also poultry operations.

"Man, have we graduated," exclaimed Milt Peters, the romantic employee. "We used to meet upstairs amid the feed sacks and display islands. Now we sit in comfort down here in new, metal folding chairs and Joe even has a podium and a lectern. We sure have class."

"What's a podium and what's a lectern?" asked Butterball Barlow, the pimply faced youngster who was always eating too many greasy hamburgers and French fries.

"They're two new antibiotics," Milt said solemnly. "Take a shot every day and both employees and employers will speed up about 36½%."

"Yeah?" said Butterball in awe. "Is Joe going to inject them into us tonight?"

"Don't let him kid you, Butterball," snapped Pop Henley, Milt's sternest critic. "His mouth gets away on him. A podium is a raised platform for speakers, a sort of stage on a small scale. A lectern is a reading desk, for a speaker to put papers on when he talks. Joe evidently felt we needed something like this for large farm meetings."

Butterball turned to Milt and stuck out his tongue. Milt just shrugged.

At this moment Joe came downstairs and walked to the front of the room.

"Aren't you going to use the podium and the lectern?" Milt asked as Joe just stood by a chair.

The brown haired feed dealer grinned, "Heck, no. That small podium can be tipped on end and stored away. It's just for special occasions, like when we hold a hig farm meeting. For a sales training meeting between friends we're much more informal."

Once more Butterball cast a withering glance at Milt. A slow thinker, Butterball possessed a strong physique, was loyal and was very conscientious.

Joe held a small pamphlet in his hand. "After the meeting tonight, boys, I am going to give each of you a copy of this pamphlet. I wish you would study it carefully. There is a lot of valuable advice in it for all of us. Tonight we are going to go over a few points in it together."

The feed dealer opened the booklet. "This author says that we can get better results on our jobs when we finish what we start. He says that the world is full of starters but it's the finishers who win out. This applies to us. When we start a project through one of these sales meetings, let's give it all we've got. Let's carry it through to the finish and then study the results."

"That takes time," Milt put in. "And we are all very busy now."

Joe smiled. "I'm glad you made that remark, Milt. The man who wrote this booklet says that the richest man in the world has no more time than any of us. He has just twenty-four hours a day—and so have we. It's what we do with those 24 hours that counts."

No one answered that one.

"I'm going to use that advice in my managerial capacity," Joe said. "I'm going to keep a time, expense and production record on every promotion we use. That record will be filed along with ideas on what we missed doing on each promotion. Then we can rectify that next time we try it."

"I classify my redheads, too," Milt offered. "I don't need a record. I can pretty well predict just what each will do under certain circumstances."

"Joe!" said Pop Henley irritably. "Why don't you just fine that young pup $5 every time he pops up with remarks about women in a sales meeting? Make him keep his trap shut about those things."

"Milt," said Joe,. "Pop is right. Confine your remarks to the topic at hand."

Milt raised his hand in compliance and winked at Smiley Johnson when Joe wasn't looking.

"This author also says all of us

FEEDERS GET ONE STEER FREE FOR EVERY 29 THEY FEED!

Starting with only 29 steers and ending up with 30 is a real accomplishment any way you look at it. Yet, feeding tests now show that a profit bonus like this is not only possible . . . it's probable in most cases.

Extensive tests compared a normal diet with one fortified with 5% stabilized animal fat on a group of yearling steers and heifers of Hereford and Angus breed. At the end of the 141 day test, those receiving the fat fortified diet gained an average of 32 pounds more . . . a bonus equal to an extra steer for every 29 head.

And that was only the beginning! Those on the fat ration consumed far less feed per 100 pounds of gain . . . 61 pounds less mixed feed and 40 pounds less roughage. On this basis, feed savings averaged 10% per head. When carcasses were graded, only 50% of the normal diet group were rated choice or better while 72% of those receiving fat fortified rations were graded prime or choice.

All these findings mean more money for the feeder. If you're not already mixing fat enriched rations, talk to your local renderer soon. He can give you complete details on tests like this, as well as other research information which shows the way to more weight gain, lower cost per pound of gain, and increased growth rate for poultry, hogs, and cattle.

Best of all the use of animal fat helps improve the market for animal protein byproducts . . . results in better cattle prices when they're sold.

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Enzymes that work are here now!

NOPGRO® WORKS

See page 15

INTERNATIONAL MILLING PLANS FALLOUT SHELTER

DAVENPORT, IOWA — Construction of a fallout shelter at the International Milling Co. plant here is expected to get underway later this year.

"We haven't finalized our plan," said D. H. Phelps, general manager, "but, we fully intend to construct the shelter. We're working on it right now."

Mr. Phelps said that Civil Defense has a high priority at the plant. The firm's 95 employees here have been shown Civil Defense films on two occasions, and the firm has installed bell and light warning devices in the mill and offices. The warning devices are similar to those in police and fire stations.

Mr. Phelps said that he believes a study of shelter possibilities by management is "definitely a good idea." Depending on physical characteristics of a plant, he pointed out, a company could provide shelter for its employees—and possibly their families.

must take the time to get the facts," Joe said. "This means here that when we serve a customer we have to find out what he wants in the way of feeds and service and remember it or record it. Then we've got a record of what we need to do to serve him well."

Smiley Johnson nodded.

"He also advises," Joe said, "that we should take time to listen to customers and take time to answer questions. We should make the customer feel that he comes first when he enters our place of business—that he's more important than the latest baseball or football scores and news."

"Milt, that's for you," Pop said. "A farmer doesn't get a chance to say Jack Robinson when he comes in here and you wait on him. You're always yapping about sports or cars or something like that."

Milt held up a finger. "No, no, Pop," he mocked. "Mustn't get in the habit of criticizing all the time, either. Be positive, not negative. You see, I've got advice, too."

Joe smiled. "Well, I'm certainly glad this little booklet and its advice is causing some discussion. That means we're thinking about the messages—not falling asleep. The copy in the booklet also says we should take time to be courteous to customers, take time to be neat and," Joe slowed down his speaking pace, "take time to do our best."

"Gee, I'm going to look forward to reading that booklet," Smiley Johnson said. "I've got some ideas already."

"Good," smiled Joe. "That's what I hoped for. Often a firm doesn't need some revolutionary new ideas to improve morale and serve customers better. All that is needed sometimes is just to realize old principles and think about them. This little booklet sums them up briefly and clearly. Good reading, boys."

Why Grain Men Prefer — Owner's viewpoint

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KERMIT LYNN, *Manager*
Lake Lillian Farmers Elevator Co.
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** A 30 HP unit, complete with base, die and all electrical, ready to run, FOB San Francisco. Every pellet mill installation also requires certain necessary auxiliary equipment. CPM sales representatives are ready to assist you in the planning, layout, startup and any future service needs toward the most efficient, day-in day-out operation of your CPM equipment.*

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Specialists Give Views on What Can Be Done During Broiler's Last 200 Hours

By Special Correspondent

GEORGETOWN, DEL.—What should be done during the broiler's last 200 hours to live? Poultry specialists pooled their ideas on this subject at a recent broiler servicemen's short course here.

Frank D' Armi, in charge of the broiler experimental farm at the University of Delaware substation here, said that a bird eats 1.5 lb. of feed, 18% of its total feed intake, during these last 200 hours (8⅓ days). During these 8⅓ days a bird is expected to gain ¾ lb., which is 19% of its total growth. "The most economical gains are made at this time," Mr. D' Armi said.

He reported that substation experiments have shown that great savings can be made without high protein levels. At the same time, carcass quality is better. There are more grade "A's" and the birds have better fleshing. This is a problem for feed manufacturers to solve, he told the servicemen.

Growers also have a problem mapped out for them, Mr. D'Armi said. Tests at the substation have shown that broilers eat a third of their feed from 2 a.m. until 8 a.m. The grower must make sure that plenty of feed is available during these early hours.

Point to Ponder

"A point to ponder for the last 200 hours is that good management leads to lasting good health at the least expense," said Dr. Donald Fogg, Delaware Poultry Laboratories, Millsboro.

Conditions to watch those last eight days are ascarids, coccidiosis, enteritis, peritonitis, air sac, and synovitis.

Ascarids are best handled in the period before the last 200 hours by worming with piperazine at 4 to 5 weeks and again at 7 to 8 weeks. The two wormings break up the cycle, the veterinarian said, so that few eggs are passed and tend to help succeeding flocks more than the current one.

For the coccidiosis problem, supplement the coccidiostat with good management practices as well as sulfa drugs if lesions become apparent or "off feed" conditions occur. For enteritis control, follow the coccidiosis treatment with an antibiotic. Keep molds and fungi out of the litter. Peritonitis often follows enteritis. Keep out enteritis. The peritonitis may lead to air sac.

For air sac disease, Dr. Fogg suggests using a vaccination program that causes the least stress, following it with, or simultaneously administering, antibiotics. Treat coccidiosis and enteritis with drugs aimed at both the main disease and also the bacterial enteritis that may follow.

Practice better management for synovitis control. Use treatment with antibiotics or furazones.

Dr. William J. Benton, University of Delaware, said, "We ask for too much if we ask for 100% protection from a vaccination program."

He said that vaccines are not going to solve all of the problems. They create false security. His advice is to prevent diseases rather than vaccinate, whenever possible.

Synovitis

Synovitis can strike a devastating blow to the broiler grower's flock. First it causes swelling in the hocks. Dr. L. M. Greene, pathologist at the substation laboratory, said the virus disease spreads to several parts of the broiler's body.

Breast blisters, internal bleeding, swollen kidneys and a green liver are some of the symptoms.

Dr. Greene said that synovitis can be treated with medication. However, once you see symptoms on a bird, it is unlikely this bird will be saved. The treatments can be used to save the other birds in the flock.

FIVE CASES OF EGGS SERVED AT 'OMELET DAY'

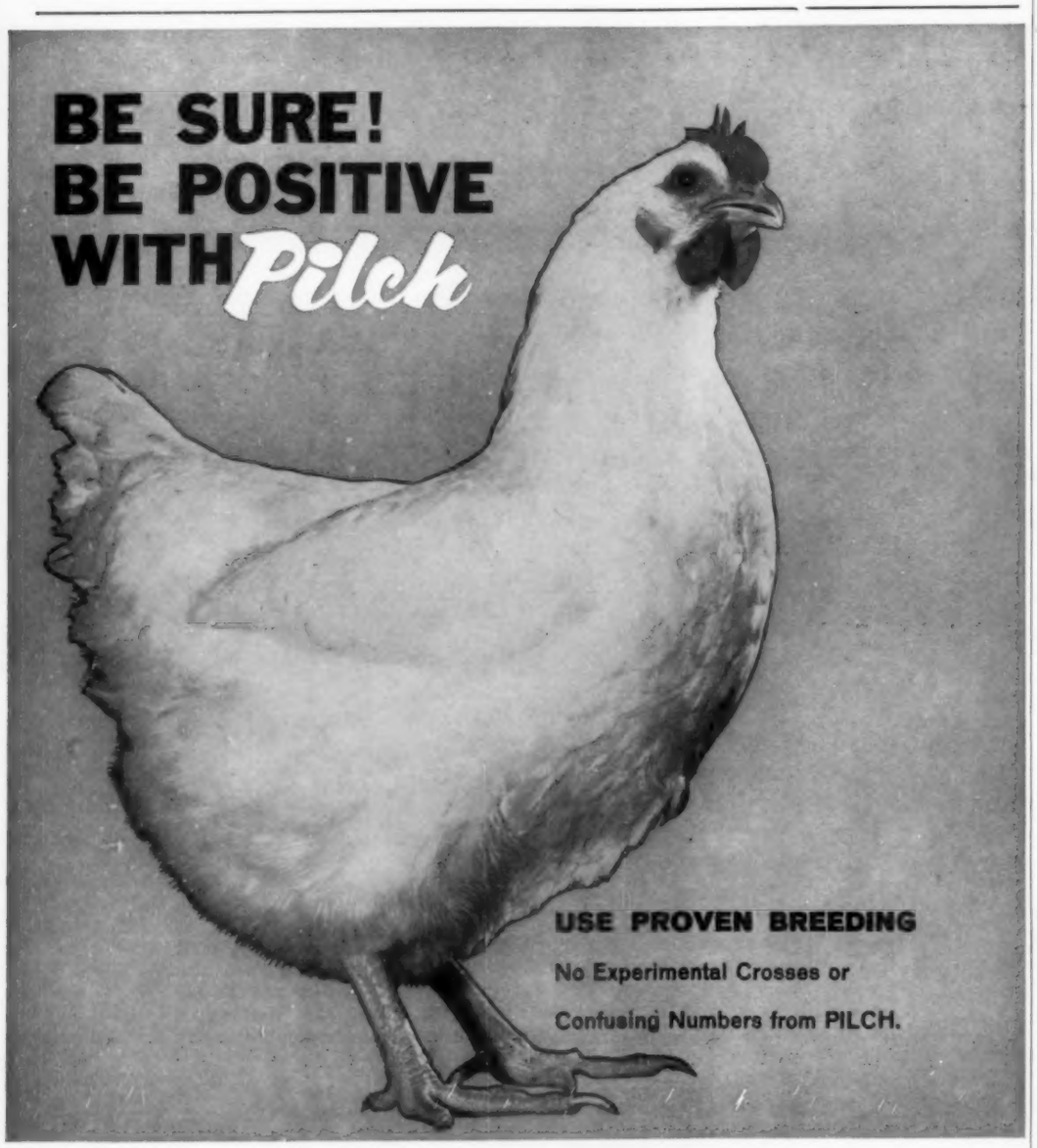
RUSSELLVILLE, ARK.—The Russellville Junior Chamber of Commerce has done its part to help the nation's egg producers. The Jaycees held an "Omelet Day," a promotion members are hoping will start a new trend.

Jaycees served more than 727 persons a total of five cases of eggs, which were donated by Arkansas Valley Industries, Mack's Skyline Egg Co., Eureka Egg Co., General Mills and Kinslow Egg Co. General Mills also donated a year's supply of eggs to the Jaycee who sold the largest number of advance tickets to the event.

Les Killebrew, general manager of the Arkansas Poultry Federation, commented: "We're intensely interested in making Omelet Day a national project. You used five cases of eggs in Russellville. Just think what it would mean if every town and city across the nation held an Omelet Day."

NEW MAILING ADDRESS

STOCKTON, CAL.—The Pillsbury Co.'s grain merchandising office here has a new mailing address and telephone number. The new mailing address is P.O. Box 631. The new telephone number is HOward 6-4095.



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Stable dry vitamin A products.

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Dry, free-flowing partially hydrogenated animal fat.

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Effective dog food deodorant.

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Just fill the handy plastic bottle with vaccine for 500 or 1000 doses. Dilute as directed. Open chick's mouth, squeeze applicator until one drop falls into mouth.

Presto. With controlled exposure, the chick develops immunity early, when it is most important. Simply follow with TRITHIADOL* in the feed, as directed, and the protection program is completed.

Chicks with early immunity to coccidiosis grow better—are stronger, healthier—better able to withstand the stresses of other diseases. No coccidiostat is needed after 5 weeks, eliminating the coccidiostat withdrawal problem.

Be first in your area to offer this valuable service. It's easy and inexpensive. Your customers will actually save money when total cost is compared to an all coccidiostat program.

Send today for descriptive folder and sample applicator, or see your local Sterwin Animal Health representative.

CocciVac Type 4 is available for broilers. Type A and B for layers and roasters—and for broilers in heavy exposure areas.

*While some growers use other coccidiostats with CocciVac, TRITHIADOL® is recommended because of its proved efficiency with the CocciVac program.

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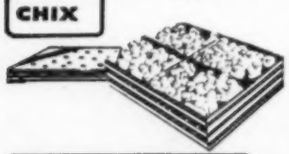

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Use of the Artificial Rumen In Evaluation of Feedstuffs

By Dr. D. C. Church
Oregon State University

The use of in vitro or artificial rumen techniques has grown from a modest beginning back as far as 1943 (25) to a rather broad general usage by most agricultural experiment stations and by many commercial institutions having some interest in ruminant nutrition or rumen microbiology. Concurrently there has developed an interest in scientific investigation of problems related to the unique digestive tract of the ruminant — classification, growth, nutritional requirements and metabolic by-products of rumen microorganisms; growth and development of the ruminant stomach; absorption and metabolism of nutrients, to name a few of interest.

Perhaps a brief explanation of the general procedures used is in order for the benefit of those readers not familiar with artificial rumen work. In its simplest form, a glass container is provided and is maintained at 39° C., the average temperature in the rumen. A substrate (microbial food) either of some natural plant material or a purified material is suspended in a mineral solution which is designed to provide the required elements and to buffer the solution at a physiological pH. Rumen liquor is obtained, strained and added to this suspension and carbon dioxide gas is usually bubbled through the mixture for the duration of time that it is allowed to ferment. The most common means of measuring activity has been that of cellulose digestion since this activity is one of the characteristic features of rumen digestion. The quantity and/or the ratio of the various volatile fatty acids (primarily acetic, propionic and butyric) also serves as a useful index since these acids are major end-products of carbohydrate digestion. Other means of measuring activity that are commonly used are dry matter digestion, nitrogen utilization and gas production.

Advantages Cited

Several obvious advantages accrue from the use of such a technique. The reduced cost when compared to experimentation with live animals, the speed with which information can be obtained and the convenience when studying short-time chemical reactions are all important considerations when evaluating this technique. The chief disadvantage is that laboratory data may be difficult to interpret in terms of live animal response.

The objectives toward which this technique has been directed are quite diverse as would be expected. You might say that the variety of applications for which the artificial rumen has been used has been limited chiefly by the imagination of the investigators involved. Certainly, there are limitations insofar as application to a specific problem or interpretation of data when such a mixed culture of microorganisms is used as a biological assay, but, by the same token, there are limitations in applying information developed from isolated cultures of bacteria grown on a medium that in no way resembles the natural habitat of the organism or information developed from chemical analysis based on reactions of concentrated mineral acids or strong bases.

Although the artificial rumen technique has been in use on a relatively large scale since the early 1950's, there is currently very little standardization in techniques among institutions, especially among investigators trained in different research laboratories. Consequently, some of the data coming out are rather difficult to compare since so many variables in technique are being used. Variables that are commonly encountered include: Extreme variation in mineral media or artificial saliva, length of fermentation time, source and preparation of rumen liquor, dilution of final media, dilution of rumen liquor, type of fermentation vessel—all glass vs. semi-permeable membrane, analyses used for evaluation, etc. About the only thing that all laboratories use in common is the same temperature of fermentation.

This type of proliferation is to be expected, and desired to some extent, in a rapidly growing area of research, and it also explains some of the contradictory results reported by various laboratories. Some of the variability in procedure exists due to differences in objectives, and some has come about as a result of research directed at seeking means of improving reliability or repeatability of the procedures employed. It would be desirable, however, for some standardization when a common objective is desired by various laboratories. For example, if several organizations are interested in using the technique for the evaluation of forages on a regional basis, standardization would make results between laboratories more meaningful.

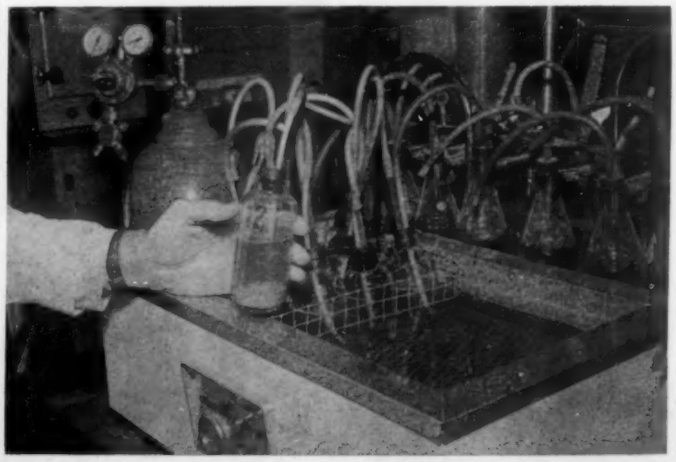
Dr. D. C. Church

AUTHOR—Dr. Church received his B.S. degree in animal husbandry in 1950 at Kansas State University, his M.S. degree in 1952 from the University of Idaho and his Ph.D. degree in animal nutrition from Oklahoma State University. He has been on the staff of Oregon State University since 1956. His chief research interest is in ruminant nutrition and rumen physiology. He has published papers dealing with carotene and vitamin A in beef cattle, pellet feeding of lambs, lamb digestion studies, artificial rumen studies and information on lamb stomach development.

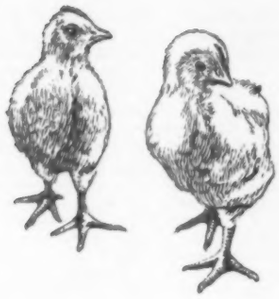
Feedstuffs Analyses

The artificial rumen technique has not, up to the present time, been used to any appreciable extent for routine analyses of feedstuffs. One reason is that a biological assay is more tedious than most chemical assays, and, secondly, there is not enough information at hand on many feedstuffs to demonstrate that artificial rumen data can be correlated with live animal response. It is obvious that whenever a straightforward, repeatable chemical analysis can be used, that is when results have some biological significance, it would usually be preferred to a biological analysis. Assays for vitamin potency serve as an example. Who would want to go to the expense, time and trouble to assay every batch of vitamin A with chicks when a good, reliable chemical method is available and one which can be interpreted in terms of biological activity? However, in our present state of development in the field of animal nutrition, more information is needed so that chemical analyses of feeds can be more closely related to animal performance. Until a closer relationship between chemical analyses and animal performance can be developed, either by developing new analyses or a recombination of existing ones, biological methods such as the artificial rumen offer promising means of filling a relatively large gap in knowledge.

A fair amount of research with the artificial rumen technique during the past two or three years has been directed toward a comarison of in vitro (laboratory) results with in vivo (live animal) digestibility. Enough data have been published from various experiment stations to show with a reasonable certainty what we can expect from this procedure with a limited number of feedstuffs. A survey of the published literature (2, 7, 12, 30) shows that in vitro dry matter digestibility is highly correlated with in vivo dry matter digestibility. Likewise, in vitro cellulose digesti-



ARTIFICIAL RUMEN—Shown above is the artificial rumen apparatus used by Dr. Church in his work at Oregon State University, Corvallis, Ore.



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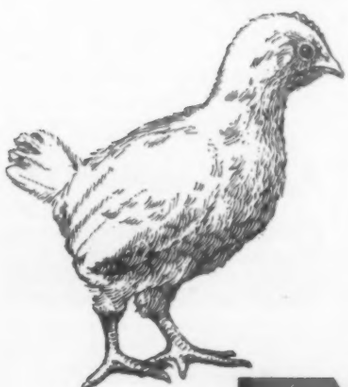

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bility (3, 4, 5, 7, 14, 17, 22, 27, 29) has been shown to be highly correlated with in vivo cellulose, energy and dry matter digestibility on a variety of forages, principally grasses. In general, published reports have indicated better correlations for grasses than for legumes, other forages or mixtures of roughage and concentrate. However, further information is required in this area. Data collected at Oregon (7), however, have indicated that the crude protein content on one species of grass is as good an indicator of in vivo digestion as is in vitro cellulose or dry matter digestibility. For that matter, other chemical fractions such as soluble carbohydrates can be shown to be positively correlated with animal performance, and others such as crude fiber or cellulose to be negatively correlated; however, the correlations in most cases are too low to be of any appreciable use in estimating animal response. One laboratory (14) has shown that a combination of in vitro cellulose digestion and relative intake by an animal can be used to predict the over-all feeding value of a forage under some conditions. Further experimentation along this line would seem to be promising.

Determining the Effect

The artificial rumen procedure has probably been used to the greatest extent to determine the effect of various nutrients, both inorganic and organic, and of various stimulatory factors on cellulose or dry matter digestion or volatile acid production by rumen microorganisms. Most laboratories employ purified media when doing this type of research. Purified wood cellulose, filter paper or other plant material such as cotton fibers are usually employed as the main substrate for the microorganisms. Reagent grade minerals are commonly used. Microorganisms from the rumen are often centrifuged, washed and resuspended in a buffer solution in order to remove growth factors (present in solution in the rumen liquor) which originated from the feed eaten by the donor animal.

When using purified media, care must be exercised in extrapolating in vitro data to the live animal data for several reasons. A number of papers have demonstrated that rumen liquor should be obtained from an animal receiving a comparable diet to that which will be used in the artificial rumen. The microbial population found in an animal fed on alfalfa hay is not the same as that from an animal fed on high levels of concentrate or on a poor quality of roughage. As a consequence, when the substrate for the microorganisms is markedly changed from the live animal to the artificial rumen, microbial activity may be quite abnormal. This precaution is especially required when some specific chemical change such as carbohydrate degradation or the ratios of the volatile acids produced are being studied. In addition, in cases where body requirements may be unrelated to or marked by requirements of the rumen microorganisms, interpretations of data may likewise be difficult. Nitrogen compounds provide a good example. Rumen organisms are capable of active growth with no other nitrogen source than urea, and apparently urea does not exhibit much, if any, toxicity for such organisms. However, toxicity to the animal is well known. Obviously, it would not be wise to conclude on the basis of artificial rumen experiments that the ruminant animal could safely be fed on urea as the sole nitrogen source in the diet. Perhaps this example is extreme, but occasional references are seen in the literature in recent years that all we have to do to improve ruminant rations is to learn how to feed the microorganisms. We must bear in mind that the rumen is only one organ and that further digestion and metabolism of nutrients occurs in other organs and tissues in the animal body. An undue emphasis on rumen metabolism, considering our present knowledge, can result in erroneous conclusions.

Artificial Rumen Limitations

The examples cited illustrate that the artificial rumen has certain limitations as does any method of evaluation, biological or chemical. Although these limitations exist, the procedure has contributed much useful knowledge. Research has shown, for instance, the availability of various phosphorus sources to rumen microorganisms (1, 28). A number of experiments have evaluated the requirements of macro and micro minereals of rumen organisms (11, 15, 18, 19, 25). The artificial rumen is also a convenient procedure to demonstrate what forms of non-protein-nitrogen can be utilized and the extent of utilization that can be expected (6, 16, 24). Vitamin synthesis has been studied (21). The procedure has been successfully used to demonstrate the effect of various treatments on utilization of various carbohydrates by microorganisms (13, 31). The effects of dietary enzymes (8), antibiotics (20, 23), hormones (9, 10), and the effect of oil (9) have also been investigated. Numerous other examples could be cited since this list is, by no means, a complete picture of investigations in which the artificial rumen has been used.

Summary

It is safe to say that the artificial rumen will be with us in some form or other for some time. Undoubtedly improvements and simplification of the technique will occur and will improve the repeatability of analyses. With the development of more information, it may be advisable for some laboratories to use it on a routine basis in evaluating ruminant feedstuffs. At any rate, the technique will remain quite a useful one to study metabolic patterns, nutrient degradation and synthesis, and microbial re-

(Turn to ARTIFICIAL RUMEN, page 61)

as your customer thinks!

Get *his* slant on Burlap's advantages.
Ask yourself, why sell him
substitutes for returnable Burlap bags?
Figure (as *he* does) that Burlap bags give him
no disposal-on-the-farm headaches. Other packaging
may be *priced* less, but Burlap *costs* less.
To him, that's what counts!
Also, as he sees it, what's a return-bag program without
Burlap? Besides, how can you operate
a bag-to-bulk storage system without Burlap?
Think, man, think!

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IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

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MAXIMUM PROFITS
the YEAR ROUND
are yours
with Pockman's Blended-Air
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CONTROLLED ENVIRONMENT
WINTER AND SUMMER
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DECATUR — ALABAMA

NOW! use nf-180 to increase pig feed tonnage

nf-180 - - already proved effective against scours in farrowing and treatment feeds - - can now improve the performance of prestarter, starter and grower feeds

What's the most serious problem hog raisers have to face—pneumonia . . . cholera . . . atrophic rhinitis . . . internal parasites? No. In a nationwide survey completed in October, 1961, hog men rated *scours* their most costly and worrisome problem . . . by far.

The reason: most drugs promising scours control just can't cope with the increasingly frequent and increasingly severe scours outbreaks plaguing hog raisers today. Germ resistance to antibiotics, sulfas and arsenicals is one of the problems.

And, unless positive steps are taken, scours losses can be expected to get even worse. That's because the increased seriousness of scours appears to go hand-in-hand with modern hog raising methods. Continuous use of farrowing and feed-out facilities . . . larger herds . . . confinement feeding . . . widely scattered sources of breeding stock and feeder pigs . . . all place increased stress on young pigs and complicate sanitation and health programs.

The one answer: nf-180

During the last three years, nf-180 has proved itself the one drug that stops scours practically without exception . . . even where other products fail. Up to now, nf-180 has been used three ways:

First, it was used as an in-the-feed treatment by farmers who were on the brink of being forced out of the hog business by scours. And nf-180 worked!

Second, a liquid form of nf-180 for oral administration to suckling pigs was introduced early in 1960. It worked, too. *nf-180 Suspension* quickly became the fastest-selling product of its kind.

Hess & Clark introduced a third use of nf-180 for swine in the spring of 1960. It was a new concept in scours protection — *treating the pregnant sow to protect the baby pigs.* This program breaks the scours infection cycle by killing scours organisms in the sow's intestine . . . prevents scours germs from being transmitted to the newly farrowed pigs. Today, nf-180 is more widely used in farrowing rations than any other medication.

New! nf-180 cleared for pig feed

Now you can take advantage of nf-180's reputation for scours prevention by adding it to your prestarter, starter and grower feeds.

Medicated with nf-180, your pig feeds will cut scours-caused mortality in young pigs . . . reduce stunting and unthriftiness . . . help customers wean more and bigger pigs. Your nf-180-medicated pig feeds will, for the first time, end the worry of pig scours . . . reason enough for customers and prospects to buy your program over competition.

But you needn't limit this demonstration of extra feed performance to farms with severe scours problems. You can also use nf-180-medicated feeds to improve performance of apparently good-doing pigs. Actually, pigs are seldom 100% healthy. They are almost always held back by "hidden" scours problems which cause pigs to go off feed . . . roughen up and slack off in growth after weaning, castration and other stresses. nf-180 clears up this low-level disease drag . . . helps your feed make good-doing pigs do even better.

For details on 2 ways nf-180 can help you increase hog feed sales, turn the page ▶

nf-180 helps you outsell competitive pig feeds these 2 important ways

1. Helps you convince prospects to try and compare your pig feeds

The first step in selling a hog feed prospect is getting him to try your feed. nf-180 helps make this job easier in several ways:

DEALER ENTHUSIASM — Hog raisers who try nf-180-medicated pig feeds see visible results. They become enthusiastic boosters . . . and this spirit rubs off on dealers. And an enthusiastic dealer can't help but be a better salesman for you.

REPUTATION OF nf-180— nf-180's reputation for delivering dependable results as a scours treatment and in the farrowing ration is an established fact. This makes it easier for you to sell the extended protection of nf-180 in prestarter, starter and grower feeds.

MAGAZINE, RADIO ADVERTISING — This spring your customers will hardly be able to open a farm or hog magazine without seeing an advertisement for nf-180-medicated pig feeds. And these information-packed nf-180 ads really sell. One dealer wrote, "This is the most effective advertising we have seen for many years. It really has brought customers to the mill."

Backing up this magazine advertising are nf-180 radio announcements on 30 stations in 10 midwestern states.

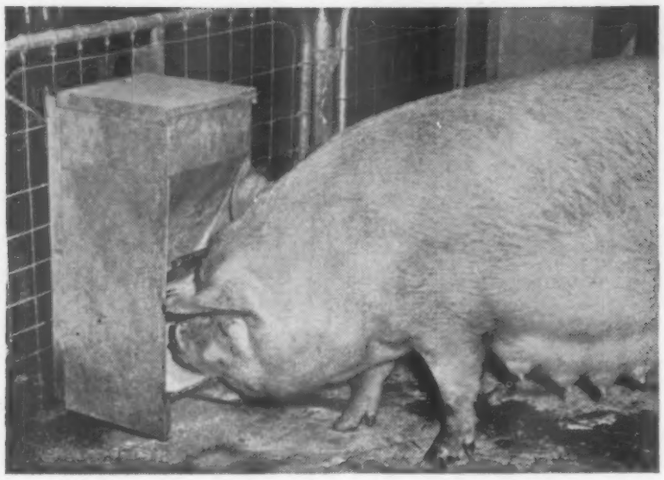
LOCAL SELLING HELPS — Hess & Clark provides all the local promotional help you need to sell nf-180-medicated pig feeds. Included are posters, handout pieces, mailers, counter displays.

FARMER MEETINGS—These can be the best selling vehicles of all. Make them more effective than ever with a full-color sound slide film and a 13½ minute, 16 mm. color film on nf-180 medicated swine feeds.

EFFECTIVE ADVERTISING — In a farm magazine survey of 1,100 feed dealers, 55.7% of the dealers reported direct inquiries from nf-180 advertising . . . 53.4% reported definite prospects for future feed sales.

LOCAL SELLING HELP — Posters, mailers, informative handout pieces and the nf-180 Service Center for store counters help dealers identify with and sell nf-180 feeds.

PEP UP FARMER MEETINGS — Two full-color films help you sell nf-180-medicated pig feeds: a sound-slide film entitled "The Missing Link" . . . and a 16 mm. movie, "And This Little Piggy Had None."



FIRST, BREAK THE SCOURS CYCLE — A solidly established way to protect newborn pigs from scours is to feed an nf-180-medicated sow feed one week before and two weeks after farrowing. nf-180 kills scours organisms in the sow's intestine . . . prevents them from being carried into clean pens and infecting the pigs.

NOW EXTEND nf-180 PROTECTION — New nf-180-medicated creep, starter and grower feeds now enable hog raisers to protect pigs against scours through the critical early growth period. Sell an nf-180-medicated pig feed to help your customers reduce stunting, cut mortality, improve feed efficiency right from the start.

2. Gives your pig feeds an edge in feeder comparison tests

Once you get a prospect to try nf-180-medicated pig feeds — especially a prospect with a scours problem in his herd — you can almost be sure of a faithful customer for a long time to come.

The reason: your nf-180-medicated pig feeds prevent scours problems that won't yield to any other kind of starter feed. Even on farms where scours is not severe or even apparent, nf-180 helps hog raisers wean more and bigger pigs.

For best results, recommend that hog raisers start with an nf-180 farrowing feed and follow with your nf-180-medicated pig feeds. Either program used alone, however, will show profitable results.

BREAK THE SCOURS CYCLE with your sow farrowing feed containing 150 grams furazolidone (nf-180) per ton. Fed one week before and two weeks after farrowing, an nf-180 sow feed kills scours organisms in the sow's intestinal tract . . . prevents them from being carried into clean pens and transmitted to the baby pigs.

CONTINUE PROTECTION by following with your nf-180 pig feed as soon as pigs begin to eat. nf-180 will protect against scours, reduce stunting, speed gains and improve efficiency during the critical early growing period . . . when differences in feed performance really stand out.

These men gave nf-180 a trial . . . now insist on it

Cliford Branstad | John High | Ken Kirby | Bernard Kisch | Howard Riley

TYPICAL RESULTS FROM INTERVIEWS WITH nf-180 USERS

	before nf-180 feeds		after nf-180 feeds		
	pigs farrowed per sow	pigs weaned per sow	pigs farrowed per sow	pigs weaned per sow	comments
Cliford Branstad Thompson, Iowa	11-12	7	11-12	9	"Scours isn't nearly the problem it used to be."
John High Rockford, Ohio	12	9	12	9	". . . far less stunting and setbacks."
Ken Kirby Prospect, Kentucky	10	5	10	10	". . . marketing pigs 2-3 weeks earlier."
Bernard Kisch Charles City, Iowa	9-12	6	10	8.5	". . . weaning weights considerably higher."
Howard Riley Charlotte, Michigan	8	7.5	10.2	10	". . . pigs are 5 lbs. heavier at weaning."

Give an nf-180-medicated pig starter feed a try during the early farrowings this spring. Judge for yourself if it isn't just what you need to stimulate hog feed sales.

nf-180®
Brand of furazolidone

HESS & CLARK
ASHLAND, OHIO
Division of Richardson-Merrell Inc.

NT-1-11

Challenging Decade Is Michigan Theme

GRAND RAPIDS, MICH.—"This Challenging Decade" is the theme which will set the tone for the 28th annual convention of the Michigan Feed and Grain Dealers Assn., to be at the Pantlind Hotel, Grand Rapids, Dec. 6-8.

Charles Force, president, Grain and Feed Dealers National Assn., will speak at the opening function, a dinner for directors, committee members and past presidents of the Michigan organization, at 6:30 p.m. Dec. 6. He will present national association highlights.

Ray Bohnsack, president of the Michigan association, will present his report at 10:30 a.m. Dec. 7, to be followed by a business session and visits of exhibits.

Noon luncheon speaker will be Dean McNeal, executive vice president, Pillsbury Mills, Minneapolis, and chairman of the American Feed Manufacturers Assn. That afternoon, there will be speeches by Ron Kennedy, vice president in charge of personnel, F. H. Peavey & Co., Minneapolis, "Building Customers," and Paul Sanders, head of quality control, Elanco Products Co., Indianapolis, "Food and Drug in Today's Feed and Grain Business." The convention theme, "This Challenging Decade," will be the topic of the banquet speech the evening of Dec. 7 by Karl E. Scott, president, Ford Motor Co., Canada.

Final day speakers will be: Dr. Howard Zindel, head of the poultry department, Michigan State University, East Lansing, "The Future of Poultry in Michigan," at 9:30 a.m.; Lester Powell, credit manager, John Deere Co., Lansing, "Controlling Credit," 10 a.m., and Joseph Haspray, director, Evanston, Ill., Agricultural Stabilization and Conservation Service commodity office, "Merchandising CCC Grain," 10:45 a.m.

Final speaker of the convention will be Edward E. Reynolds, vice president, McMillen feed division, Central Soya Co., Fort Wayne, Ind., "Selling and Merchandising in This Decade." He will speak at the noon luncheon Dec. 8.

INCORPORATE IN COLORADO

CHERAW, COLO.—Colorado Turkey Breeders, Inc., has filed articles of incorporation listing $200,000 authorized capitalization to buy, sell, raise, experiment with and grade all kinds of poultry and livestock. Incorporators are M. R. and Doris V. Watters and M. D. and Tessie H. Butler. The incorporators and Milton Richert make up the initial board of directors.

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8" diameter

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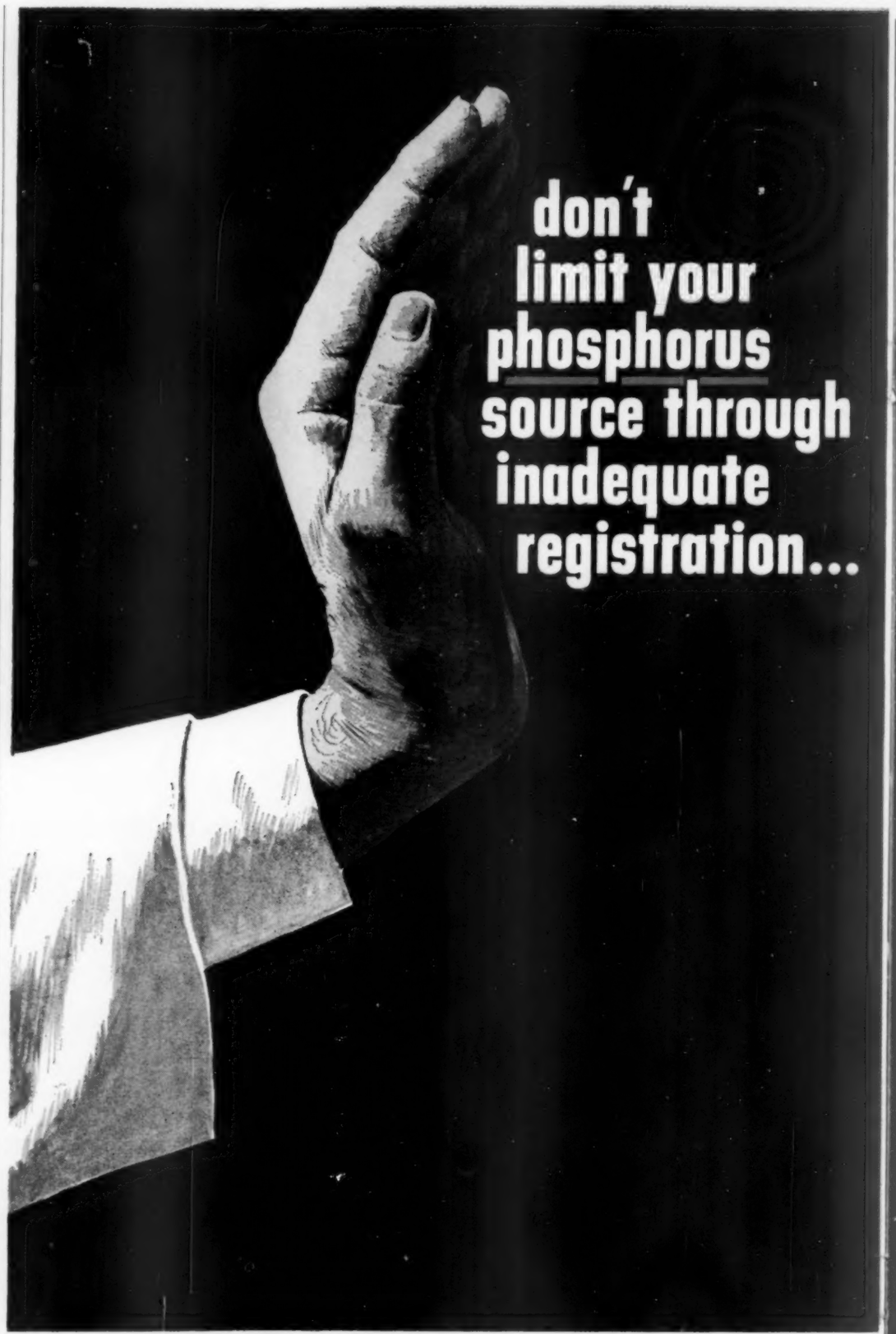

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18.0% min.	31.0% min. 34.0% max.	0.18% max.

Screen analysis: All through 14 mesh; 80% on 200 mesh, plus or minus 5%.

Let us figure the cost of CDP delivered to your plant.

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Cattle Grub Booklet Will Be Distributed

CHICAGO—The "Story of Cattle Grub Control — Why, How and When" is the title of a publication to be distributed by Livestock Conservation, Inc., during the coming months. It was developed by the National LCI Cattle Grub Committee to call attention to the fact that "the grubs in cattle now got there last summer."

The pocket sized folder lists the available systemic grubicides with the pertinent facts concerning their application. Three materials currently are on the market, it points out. These may be used as a spray, in a dipping vat, as a back-line pour-on or as a feed additive. The booklet also gives a suggested time table for treatment of cattle going into the feedlot next season.

Representatives of the firms manufacturing the chemicals should be consulted before attempting treatment after Nov. 1, the booklet advises. Recommendations for all of the available systemic materials stress treatment as early as possible after the end of the egg-laying season of the heel fly. They also advise against use of systemics after the grub larvae have reached the back.

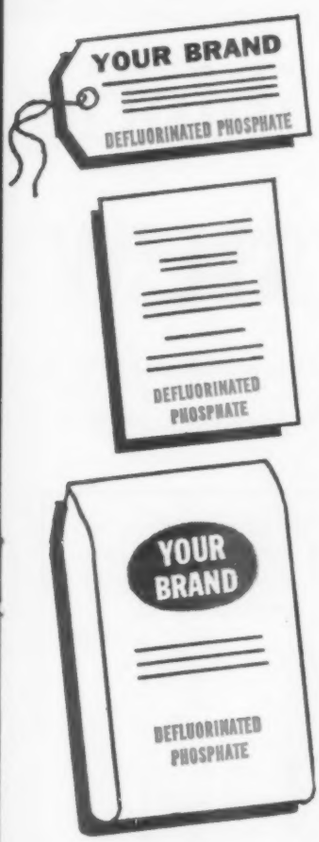
SOUTH CAROLINA MILL BURNS

COLUMBIA, S.C.—The J. W. Conder Co. feed mill near Columbia was destroyed by fire recently. The firm engaged in livestock sales and operated the mill in conjunction with the business.

L. W. Conder, Jr., vice president, said the loss included 200 tons of hay, 75-100 tons of cottonseed hulls, a quantity of fertilizer and several tractors.

...be prepared to take advantage of favorable market conditions...

Include the term "defluorinated phosphate" on your registration forms, bags and tags, and you can interchangeably formulate with either defluorinated or dicalcium phosphate



The AAFCO definition states: "Defluorinated phosphate includes either calcined, fused, or precipitated calcium phosphate. It shall contain not more than one part of fluorine (F) to 100 parts of phosphorus (P). The minimum percentage of calcium (Ca) and phosphorus (P) and the maximum percentage of fluorine (F) shall be stated on the label. The term 'Defluorinated' shall not be used as a part of the name of any product containing more than one part of fluorine (F) to 100 parts of phosphorus (P)." (Adopted 1952)

When you register your feeds to contain defluorinated phosphate, this definition provides for the use of *either* defluorinated or dicalcium phosphate. By inadequate registration, you restrict your phosphorus source.

Formulate with either defluorinated or dicalcium phosphate by registering your feeds *now* to include the term "defluorinated phosphate."

Use a defluorinated phosphate tried and tested by State Agricultural Experiment Stations and unaffiliated laboratories . . . CDP. CDP is ALL biologically useable . . . handles easily in bags or bulk.

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COMPANY, INC. • NORFOLK 1, VIRGINIA

When you "climb aboard" the Ultra-Life Program, you're in for a smooth ride to successful feed business. Here's what is in store for you:

- THE BEST VITAMIN AND TRACE MINERAL PRODUCTS
- INDIVIDUALIZED NUTRITIONAL SERVICE
- SKILLED SALES TRAINING
- ADVERTISING PROMOTIONS
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Climb Aboard!

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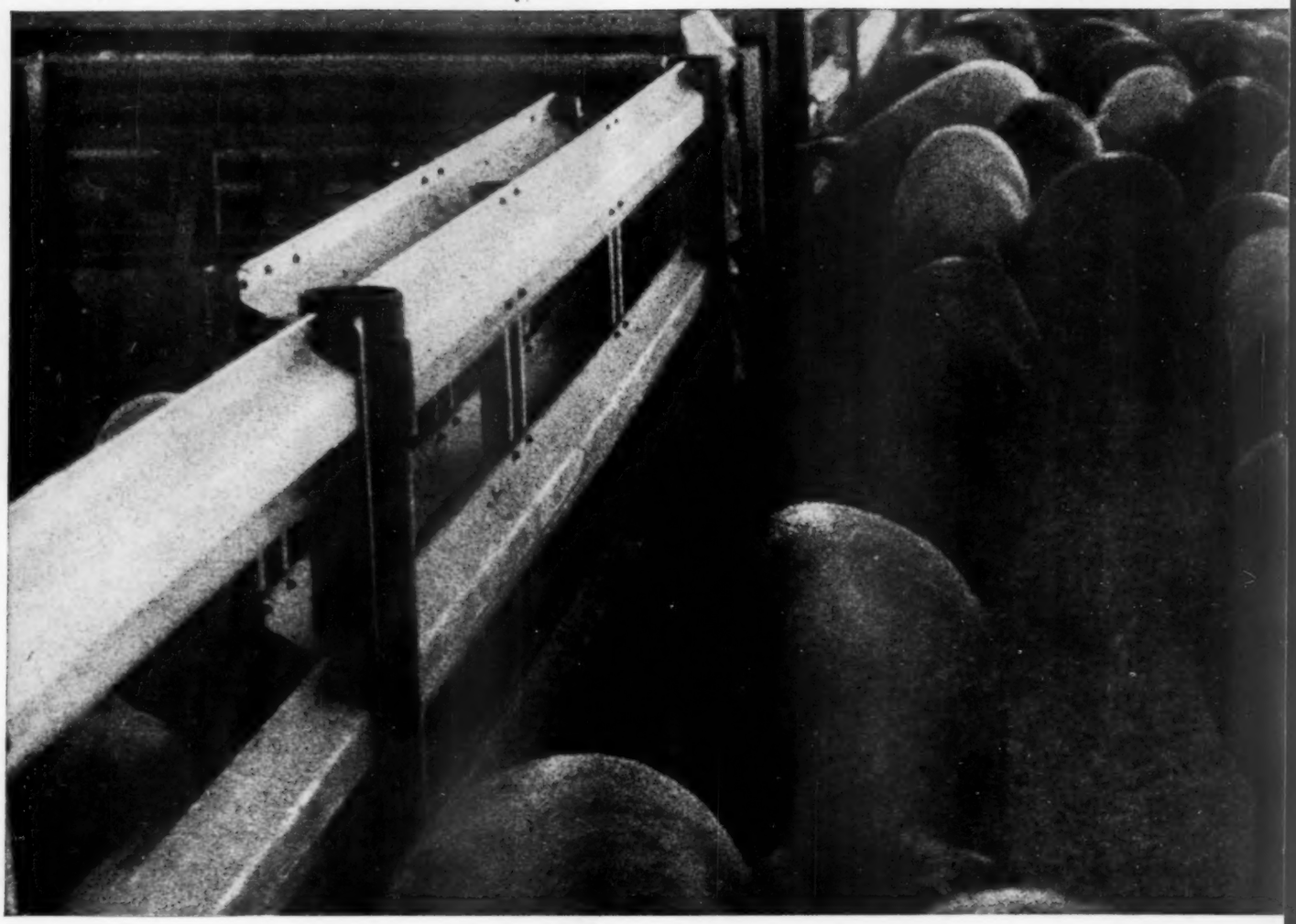

No matter what antibiotic switch to new

Hogs fed rations with Taomyxin averaged:

- **8 days less feeding time to market**
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	Control†	Taomyxin
GROWTH		
Number of trials	12	12
Number of pigs	694	669
Av. daily gain—lbs.	1.38	1.48
Increase over controls—%	—	7.25%
FEED EFFICIENCY		
Number of trials	12	12
Number of pigs	694	669
Lb. feed/lb. gain	3.70	3.62
Improvement—%	—	2.20%
ECONOMICS††		
Cost per cwt. gain	$11.951	$11.761
Savings per cwt. gain	—	.190
Savings per pig (180 lbs. gain)	—	.342
Savings per 100 pigs	—	$34.20

†Other antibiotics and combinations of antibiotics.
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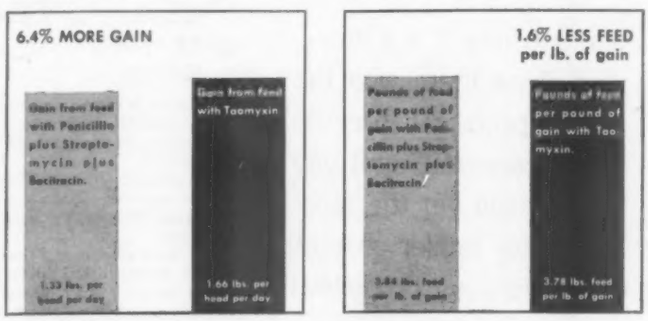
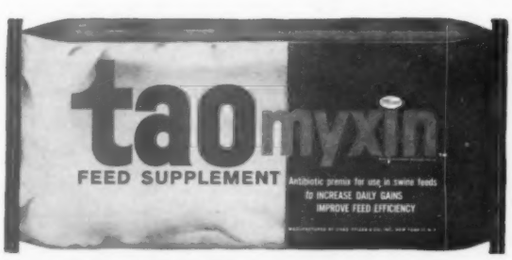

6.4% MORE GAIN
Gain from feed with Penicillin plus Streptomycin plus Bacitracin.
1.33 lbs. per head per day.
Gain from feed with Taomyxin
1.66 lbs. per head per day.
1.6% LESS FEED per lb. of gain
Pounds of feed per pound of gain with Penicillin plus Streptomycin plus Bacitracin
3.84 lbs. feed per lb. of gain
Pounds of feed per pound of gain with Taomyxin.
3.78 lbs. feed per lb. of gain

Taomyxin produced 10 lbs. more gain per day per 100 pigs . . . on 6 lbs. less feed per 100 lbs. gain.

For this trial, a regular, high-quality swine feed was used. Taomyxin was added to part of the feed, penicillin, streptomycin, and bacitracin to the rest . . . and the performance of the different rations was compared.



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Abstracts from Abroad

By Dr. Rudolph Seiden

Does Iron Therapy Influence Weight Gains?

A widely publicized theory has been shattered by D. G. Dale, et al., of the (Canadian) Macdonald College, P.Q. (Cjvs. 193), by their interesting investigation of weights and hemoglobin levels of piglets (1) at birth, (2) at three weeks of age and (3) when 154 days old. They used 30 litters of 291 piglets belonging to four breeds, weighing initially between 1.5 to 4 lb. each. Some received parenteral, others (repeatedly) for two weeks oral iron.

Among the conclusions reached—based on chemical and statistical analyses:

1. Birth hemoglobin levels ranged from 5.6 to 9.8% (w/v).

2. The 154-day body weight showed no relationship to the hemoglobin levels at birth or three weeks of age.

3. No economic advantage can be expected from any method administering iron in any form for purpose of elevating the hemoglobin level above the normal birth levels.

4. An unexpected finding—litters of less than 10 piglets have lower average hemoglobin values, but the latter were higher in piglets of lower birth rate.

5. Two days of age is the optimum time for initiating iron therapy, because then the hemoglobin level starts its declining trend.

6. Neither the birth nor the 3-week hemoglobin levels exerted a statistically significant effect on the 154-day weight of the pigs; but their birth weight did.

◆

Influence of Nitrogen Source on Growth

The growth response of chickens receiving proteins of very different biological value was studied by the French investigators, C. Calet, et al. (Bms. 59525), who used two different feeding systems. The protein sources were peanut or fish proteins given in equal quantities, either separately or mixed with the diet.

In the first group, each bird was fed 25.5 gm. (approximately 400 grains) daily of complete diet containing 20% protein. In the second group, each bird was given simultaneous access to two feeders, one containing the 5.1 gm. of protein per bird per day, the other containing the nitrogen-free ration supplied ad libitum. The food intake was measured daily.

The results showed that an increase of 30% in the energy consumption was obtained when fish meal was substituted for peanut oil meal.

Free-choice consumption of calories failed to increase growth, compared with the other feeding system, in the case of peanut oil meal; but in the case of fish meal, it led to an improvement of weight gains. When the proteins were given mixed with the diet, their efficiency was not complete in that too many calories were given in the peanut diet, too little in the fish diet.

◆

Animal Protein in Feed And Hemoglobin Level

Dr. E. Glawischnig of the Veterinary College in Vienna, Austria (Wtm. 249), gave to sows a basal diet of boiled potatoes and water from the fourth week of pregnancy until the fifth week after birth. The ration of some animals was supplemented by 10% of fish meal and 3% of yeast.

Following birth, milk samples were assayed for total nitrogen; the average milk protein level was almost equal in all sows.

The piglets were separated in two equal groups and one of them received 150 mg. of iron dextran two days after birth. Hemoglobin levels remained constant in all piglets treated with iron, whereas a marked reduction was observed even in those produced by protein-fed sows.

The investigator concluded that the protein level of the diet of pregnant and lactating sows has no influence on the hemoglobin values of suckling piglets. However, in the third week of life the piglets produced by potato-fed sows showed smaller weight gains than those from sows receiving protein supplementation.

Thus, it follows that proteins contained in the diet of pregnant sows are very important for milk yield and the normal development of piglets.

◆

Iron Metabolism

M. H. Lucas, et al., of the University of Queensland (Avj. 306), found that the mean levels for plasma-iron three weeks after conception were 225±30%; during pregnancy these values fell amounting to only 151% at the time of parturition. Iron levels of liver samples from ewes fell simi-

(Turn to ABSTRACTS, page 64)

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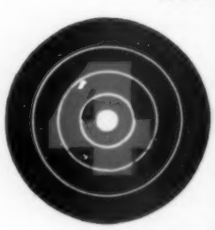

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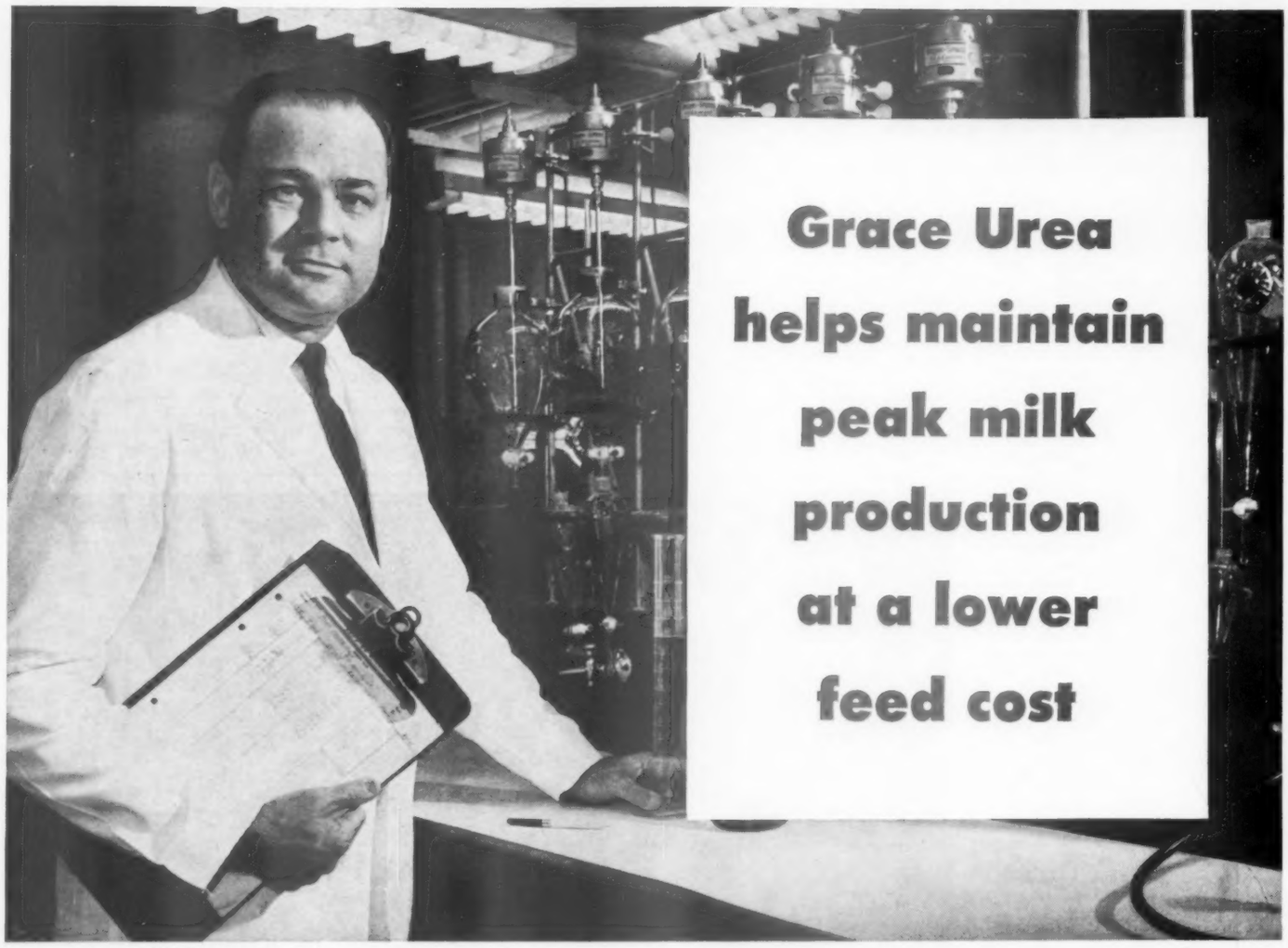

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Effect of Certain Rearing and Laying House Environments on Performance of Incross Egg Production Type Pullets

● W. D. Shupe and J. H. Quisenberry, Texas A&M College Station, Poultry Science, Vol. 40, No. 5, pp. 1165-1171, September, 1961.

ABSTRACT

A total of 2,652 commercial incross female chicks were kept in the brooder house until 14 weeks of age. At this time 960 pullets were moved to 32 colony cages (3½ ft. by 8 ft.). One half of the cages were constructed with wooden slat sides, and the remainder had wire sides. Other than this difference, the cages were identical and had the same type wire floors, water troughs and feed troughs. Also, at 14 weeks of age, 815 pullets were moved to eight range pens and 814 pullets were left in the brooder house to be reared in eight floor pens.

As a further experimental variable, 25 birds per pen were placed in one half of each type of the colony cages, and 35 birds per pen were placed in the remaining colony cages of each type. All chicks were fed a starter ration for 8 weeks, and then a grower ration was fed until the pullets were moved to range and colony cages at 14 weeks of age. After 14 weeks, diets containing different levels of protein (12, 15, and 18%) and 15% fiber were fed to certain lots of birds. This was done to attempt to restrict their caloric intakes. Other groups were full-fed the growing ration, and still others were fed the same growing ration, but mechanically restricted to 10 lb. of feed per day per 100 pullets. All of the various dietary treatments were set up in a balanced fashion so that the rearing and housing methods could be treated independently. Although the results of the feeding of the various diets are not reported as such in this particular article, they have been reported elsewhere (Texas Nutrition Conference, 1959) and will be considered in this column later on.

At 22 weeks of age the pullets were housed for egg production. One hundred pullets from range, 100 from colony cages, and two groups of 100 each from confinement pens were housed in floor pens with 100 birds per pen. These were selected randomly with similar numbers from each growing diet. Three hundred and twenty pullets from the range were housed in individual cages and all growing diets were equally represented. Also, 26 cages in the colony cage house were used to house 650 pullets from the different rearing and feeding treatments. There were 13 slat sided cages and 13 wire sided cages with 25 pullets housed in each cage. There were four pens in each end of the house for each rearing method (colony, cage, range and confinement). Four diets, one for each pen, were represented in each of the groups of four pens in each end of the house. Thus, 24 pens were accounted for. The other two pens, one in each end of the house, contained 25 birds each of which had been reared in colony cages and had been fed a diet different from the four fed other pens.

During the laying period, all birds were fed a well-fortified low fiber (3.25%) cage laying ration containing approximately 15.5-16.0% protein.

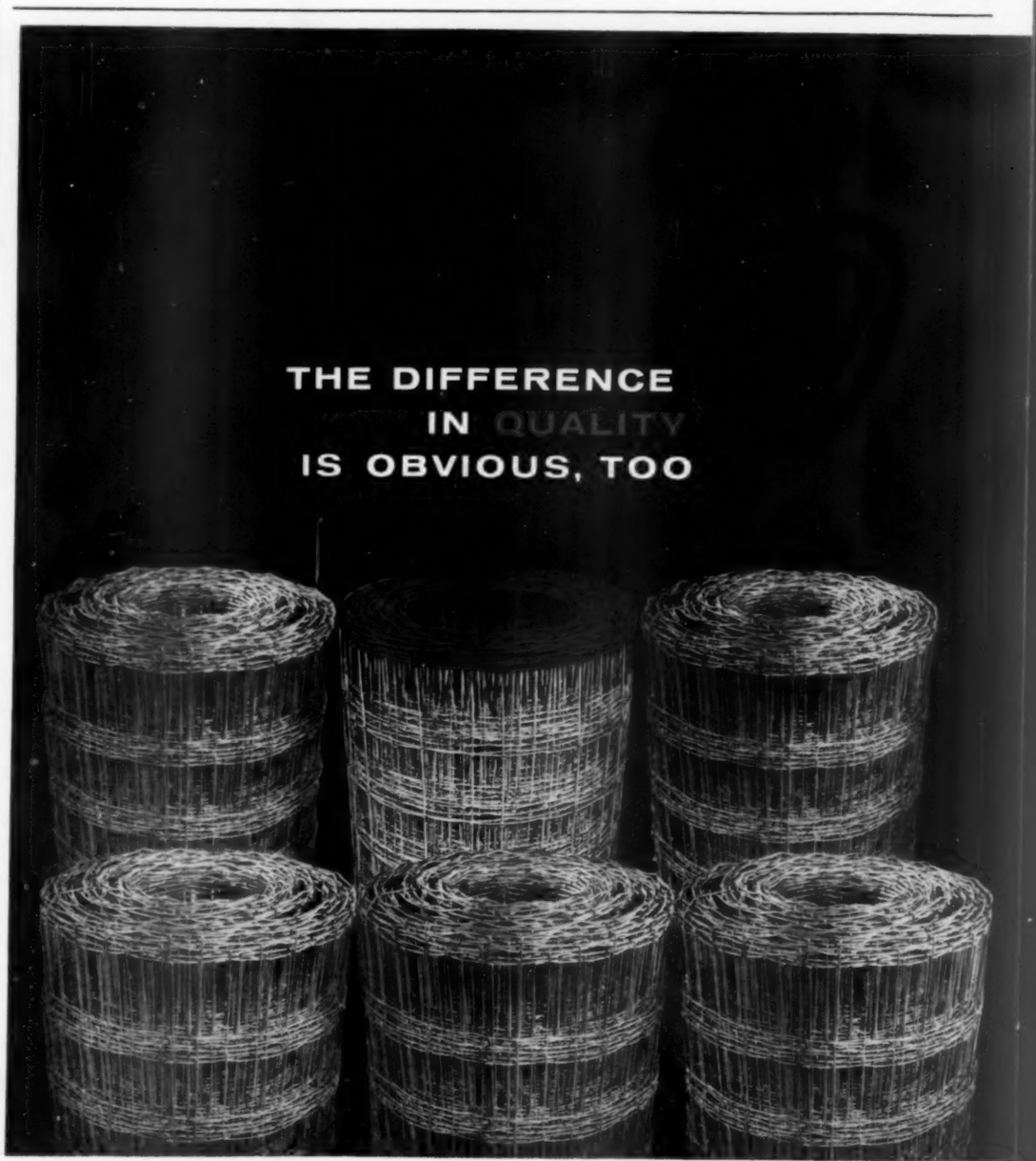
Space does not permit a detailed review of the results of the trial but the conclusions from the experiment were as follows:

Rearing Period—

1. Pullets reared in colony cages had the heaviest body weight (3.08 lb.) at the end of the rearing period. Pullets reared on range were second (2.82 lb.), and floor pen birds were lightest (2.77 lb.). All differences were highly significant.

2. The colony cage reared pullets had significantly higher feed consumption than floor pen and range reared birds (11.68 lb. vs. 9.7 and 8.74 lb., during 14-22 week period).

3. Mortality of the colony cage



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reared birds was significantly higher (2.5%) than for floor reared birds (0.49%). There was no significant difference in the mortality of range (1.35%) and colony cage, range and floor pen birds.

4. There was no significant difference between birds reared in colony cages with slat sides and with wire sides in body weight, feed consumption or mortality.

5. There were no significant differences in body weight, feed consumption or mortality between birds housed at the rate of 25 and 35 birds per pen in the colony cages.

Laying Period—

1. In the laying houses there were no significant differences in average body weight, egg production, egg weight, feed efficiency or mortality attributable to the different rearing managements.

2. Birds housed in floor pens had significantly lower body weights (3.64 lb. vs. 3.88 and 3.95 lb.) and laid smaller eggs (57.9 gm. vs. 59.1 and 58.9 gm.) than birds housed in colony and individual cages. There was no significant difference in body weights of colony and individual cage housed birds.

3. Birds housed in pens with wire sides in the colony house maintained a significantly higher body weight (4.04 lb. vs. 3.93 lb.) and laid heavier eggs (59.6 vs. 58.9 gm.) than birds housed in slat-sided cages.

4. Individually caged birds produced at a significantly higher rate (71.5%) than birds in colony cages (61.7%) and floor pens (62.2%). The difference in production between colony cage housed and floor housed birds was not significant.

5. Although not statistically significant, birds housed in slat sided cages produced at a slightly higher rate (62.6 vs. 61.0%) on significantly less feed (4.69 vs. 4.89 lb. feed/doz. eggs) than birds housed in wire sided cages.

6. Birds housed in individual cages had the best feed efficiency (4.17 lb. feed per dozen eggs) followed in order by floor pens (4.56 lb.) and colony cages (4.76 lb.). The difference between individual cages and the other two housing methods was significant, while the difference between colony cages and floor pens was not.

7. Mortality of birds in individual cages was significantly lower (3.75%) than for birds in floor pens (12.75%) or colony cages (11.93%).

8. Mortality of birds in wire sided colony cages was significantly higher (17.19%) than for birds in slat sided colony cages (6.62%).

COMMENT

Many commercial men have adopted practices which are relatively untested in an effort to increase labor efficiency and reduce over-all costs—such men are known as innovators and have contributed much to over-all agricultural progress. So far, almost no work has been conducted on the effects of colony rearing of pullets and relatively little is known as yet on the effects of colony housing of layers versus floor pens and individual cages. This research is, therefore, quite important as it points out that design of colony cages can influence results, with slat-sided ones appearing to be best. The subject of colony cages certainly needs much more work done on it by the various colleges and recommendations should be made as soon as possible, particularly since many commercial men in the milder sections have gone to colony cages rather than individual cages.

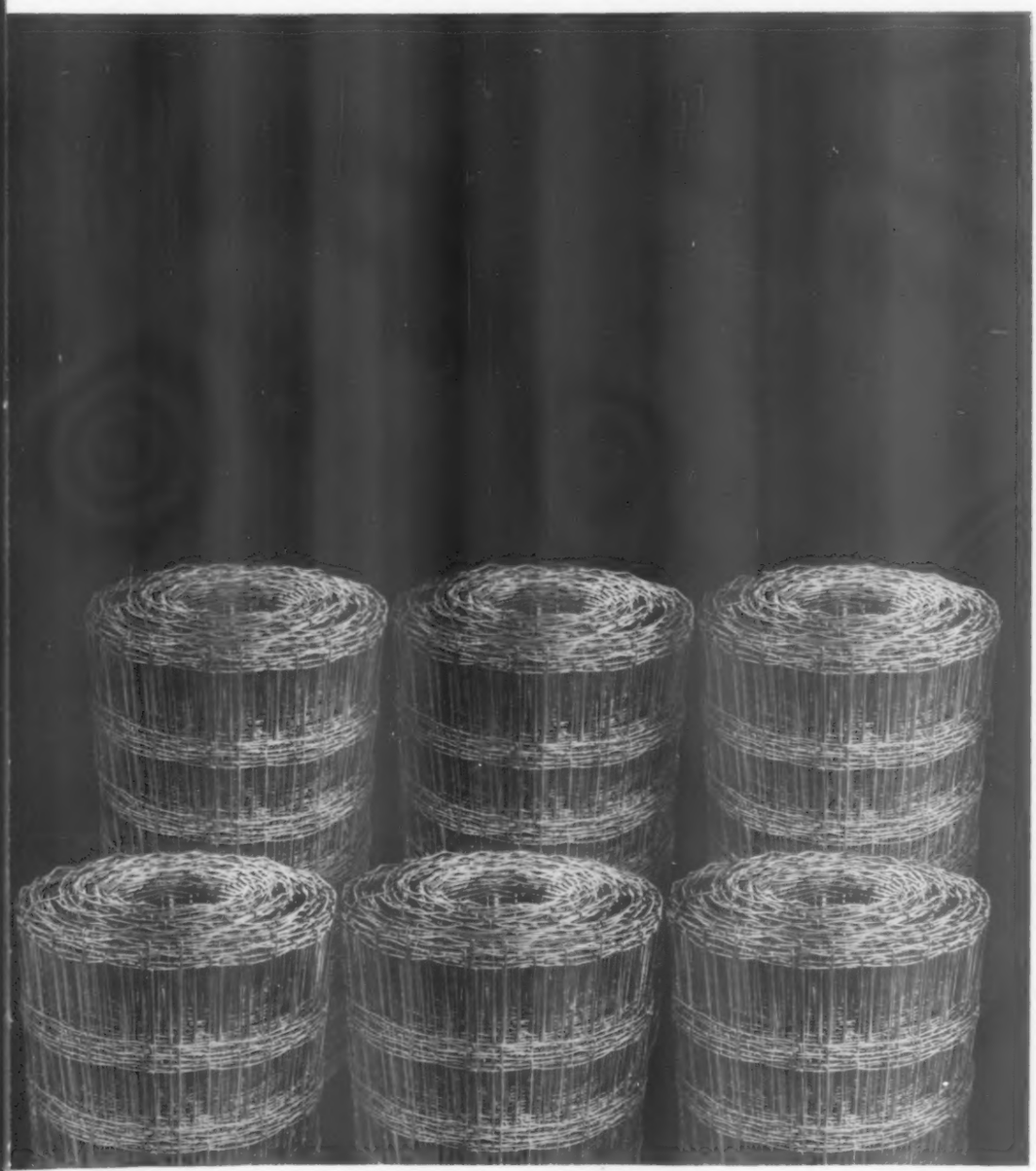
As mentioned previously, the results of the nutritional side of this study were reported at the 1959 Texas Nutrition Conference and were essentially as follows: With the exception of the lots that received the basal diet full-fed during the rearing period, there were greater differences between rearing environments in the total number of calories consumed between the 14-22 weeks than between diets. Even though more feed was consumed on the high fiber diets, the calories consumed were considerably less than when the basal diet was full-fed, and also less than when the basal diet was restricted to 10 lb. per 100 birds per day. Rearing birds on range served as an automatic caloric restricter.

It should be mentioned that additional experiments have been conducted on this important subject at Texas, but, as yet, full details have not been published. When they are available, results will be reviewed in this column along with any other pertinent data.

Contact Legislators on Grain Sale Policies

SAN FRANCISCO, CAL.—The Grain Exchange here has distributed to its members a "suggested" message to California legislators along with names and home addresses of the state's two senators and 30 representatives.

The message offered by the Exchange board of directors urges members to write on ". . . how selling policy of the Commodity Credit Corp. in selling grain is disrupting orderly marketing of grain and this essential industry. If continued indefinitely, this would force the grain industry completely out of business, with resulting complete domination of agriculture by the government and socialization of this basic industry."



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Effect of Nutrition on the Solids-Not-Fat Content Of Milk—A Review

By Dr. J. M. Elliot
Cornell University

Increasing interest among dairy leaders in the solids-not-fat (SNF) content of milk as a basis for its sale has focused attention on factors which influence the level of SNF in milk. While some information is available on genetic effects and on environmental effects including nutrition, climate, stage of lactation, age and disease (21), studies dealing with nutritional effects have been disappointingly limited in both number and scope. It is not surprising, therefore, that until recently the view generally held has been that the type or amount of feed a cow consumed would have little effect on milk composition, although it might drastically change milk yield. Limited as it is, there is now sufficient evidence in the literature to indicate that level of feeding as well as type of ration can indeed exert an effect on the SNF content of milk under certain conditions. The brief review which follows is an attempt to summarize some of the more significant and interesting research on this subject.

Level of Feeding

Since the early work of Riddet and co-workers (24) in New Zealand some 20 years ago, a number of reports have shed some light on the effects of level of energy and level of protein feeding on the SNF content of milk (1, 8, 9, 10, 11, 13, 14, 16, 17, 18, 19, 22, 27, 29). It appears well established that underfeeding of energy depresses SNF. When cows were fed their normal maintenance requirements plus approximately one half of their production requirements a definite drop, ranging from 0.3 to 0.5, occurred in the percentage of SNF (24). This reduction in SNF was primarily due to a drop in the protein content of the milk.

While underfeeding only during the first five days following calving had little effect, in studies with monozygous twins (14), severe underfeeding for the first 10 days or for six week periods during early lactation had a rather marked effect (13, 14) on SNF. Underfeeding severely for 10 weeks before and six weeks following calving reduced the percentage SNF by as much as 0.6 during the first six weeks of lactation (22). Less drastic underfeeding, with energy intakes at 75-85% of requirements has resulted in similar but smaller decreases in SNF percentage, ranging from about 0.1 to 0.3 (18, 29). While the underfeeding of protein with adequate energy may tend to depress SNF content (29), feeding above normal requirements at a constant energy intake apparently will not raise it (16). This is in contrast with the effect of increasing energy intake to 110-140% of that specified by the British (Woodman) feeding standards, which has been shown to increase the SNF percentage of milk by amounts varying from approximately 0.1 to 0.3 (8, 10, 11, 16, 17, 18). That a response is not always obtained by "over-feeding," however, is evident from several reports (8, 12).

There appears to be general agreement that level of feeding exerts a much greater effect on the protein content of milk than it does on the lactose content (10, 17, 18, 19, 24, 27, 28), although in a number of cases lactose content has been appreciably affected too.

Changed to Pasture

When cows are changed from winter feeding to good spring pasture in Britain, milk protein content usually increases within a few days (27, 28, 29). Several possible explanations for this effect have been proposed and discussed (31). These include (a) an increased plane of nutrition, (b) metabolic stimulation by plant estrogens and (c) a high content of soluble carbohydrates in young grasses, which may lead to a more efficient fermentation in the rumen.

Recent work (31) has shown that when spring grass was fed indoors at the same plane of energy nutrition (115% of Woodman standard) as the winter ration, little or no response in milk composition was obtained. This would suggest that the response normally observed is due to an increase in the plane of nutrition when cows go to pasture. This suggestion is supported by other studies (27, 28) which showed that the normal pasture response is dependent on the plane of energy feeding prior to the grazing season.

While administration of estrogens by injection or implantation has been shown to increase the percentage of SNF in milk (6, 15, 20), a like response was not obtained by feeding estrogens (7, 15). Differences in the level of estrogen administration may be involved in this difference in response. Recent analyses of British pasture species, however, suggest that the estrogen content is insufficient to affect milk composition of cows at pasture (23). On the basis of these studies there seems to be little evidence on which to single out a specific substance in spring grass which stimulates an increase in the SNF content of milk. An increased level of nutrition would appear to offer a logical and an adequate explanation.

EDITOR'S NOTE: *Because of new developments in milk marketing in some areas, there is new interest in the possible effects of feeding on the solids-not-fat content of milk. In view of this, many feed men will be interested in the accompanying article, which first appeared in a recent issue of Cornell Feed Service, a publication of the New York State College of Agriculture, Cornell University, Ithaca, N.Y. The author, Dr. J. M. Elliot, is an assistant professor of animal husbandry at the New York State College of Agriculture.*

Low-fiber Rations

Balch et al. (2) working with rations low in roughage and high in concentrates, which were shown to depress the fat test of milk, observed an increase in SNF percentage of nearly 0.5 concurrent with the depression in milk fat. This was due almost entirely to an increase in milk protein content, and represented a change greater than would be expected from the change in level of nutrition (25). Similar effects have since been demonstrated (4, 5), although fat-depressing rations do not always result in such increases in SNF (3, 30). It is interesting, however, that in none of these cases has SNF content been depressed when fat test dropped. It is, perhaps, significant that in cases where the SNF content was increased the ration contained large quantities of flaked maize. This type of ration has been shown to greatly alter the ru-

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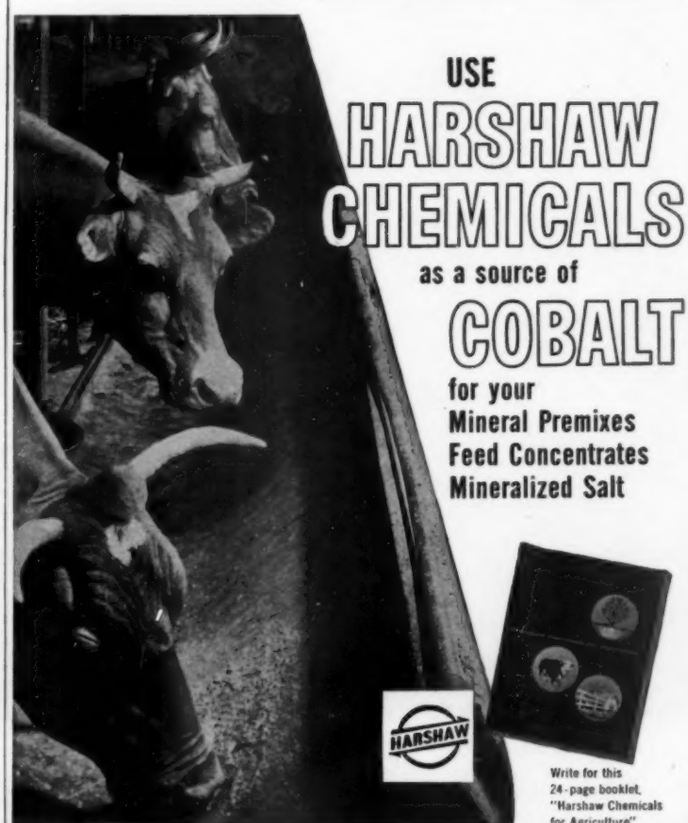

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men fermentation, resulting in much higher proportions of rumen propionic acid at the expense of acetic acid (4). Recently Rook and Balch (26), by infusing propionic acid into the rumen of cows on a basal ration of hay and concentrates, increased milk yield, depressed fat test and increased the percentage of SNF. Most of the increase occurred in milk protein, but there was a slight increase in lactose also. It has been suggested by Rook (25) that propionic acid may play a specific role in stimulating milk protein synthesis. This will undoubtedly stimulate much more research on possible relationships between the end products of rumen fermentation and the composition of milk.

Summary

Underfeeding of dairy cows has been shown to depress the SNF content of milk, the degree of depression depending, in part at least, on the severity of the energy shortage. Feeding at levels considerably above the feeding standards for energy will in some cases bring about a moderate increase in SNF percentage. Even if milk were priced on a SNF basis, this increase probably would not justify the cost, unless the accompanying increase in yield were sufficient to cover the cost of the additional feed.

The increase in SNF which occurs when cows are turned out on spring pasture is very probably due to an increase in energy intake.

Low-fiber rations, high in flaked maize, have stimulated an appreciable increase in SNF percentage. This may be mediated by an increase in propionic acid production in the rumen. While this is very interesting, and might some day lead to a practical method of raising SNF levels, both the milk market and the feed market make it infeasible at present.

When the SNF content of milk is altered by feeding, milk protein is usually affected to a much greater extent than lactose.

v v

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SMILES — They're all smiles about the broiler industry future. James Davis, left, past president of Delmarva Poultry Industry, Inc., turns over his duties to Samuel Quillin, right, Salisbury, Md., who was elected to head the group for the coming year. Mr. Quillin says that in spite of low prices suffered by the broiler industry and current gloom, Delmarva needs to increase broiler production to supply the nearby markets. The future of the Delmarva poultry industry continues to look good, he said.

Delmarva Group Elects Its Youngest President

SEAFORD, DEL.—At a meeting of the board of directors of Delmarva Poultry Industry, Inc., here, Samuel Quillin, 28, was elected president of the organization.

Mr. Quillin is the youngest president in the organization's 15-year history, it was pointed out. He succeeds James Davis, Seaford, manager for General Mills.

The new president is secretary-treasurer of the Salisbury Milling Co., Salisbury, Md., broiler feed contractor with a million birds on contract. He is vice president of the B & S Hatchery with a weekly hatch of 130,000 birds. The young broiler executive is a member of the Eastern Shore Grain & Feed Dealers Assn.

Mr. Quillin last year directed the annual fund drive for the Delmarva poultry industry. Delmarva Poultry Industry had set the goal at $135,000. This was $10,000 more than the previous year. Under his direction the goal was attained for the first time in the group's history.

He has been a director, secretary and Maryland vice president of DPI.

Other officers elected were: A. E. Bailey, Millsboro, Del., Delaware vice president; Ed Covell, Easton, Md., Maryland vice president; George Brinsfield, Princess Anne, Va., Virginia vice president; Richard Clem, Easton, Md., secretary, and Roland Hastings, Laurel, Del., treasurer.

Mr. Quillin said that DPI will put a special emphasis on new product development and expand the use of poultry meat. Also high on the list of important things to accomplish during the coming year will be an expansion of markets, he commented.

Better working relations will be sought between the local broiler area and existing markets and new market areas will be found for Delmarva's poultry, he said. "Delmarva is not producing enough poultry to satisfy nearby markets," he stated. The present cutback in production is merely a "pocketbook" cutback, he explained, to adjust for the low prices at this time.

Delmarva Poultry Industry, Inc., is made up of broiler growers, feed dealers, hatcherymen and others in the poultry business. The purpose of the organization is to promote the consumption of broilers and other types of poultry and to improve the poultry industry on the Delmarva peninsula.

The broiler industry is a $175 million business here, figures show.

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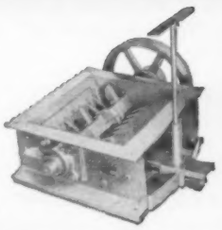

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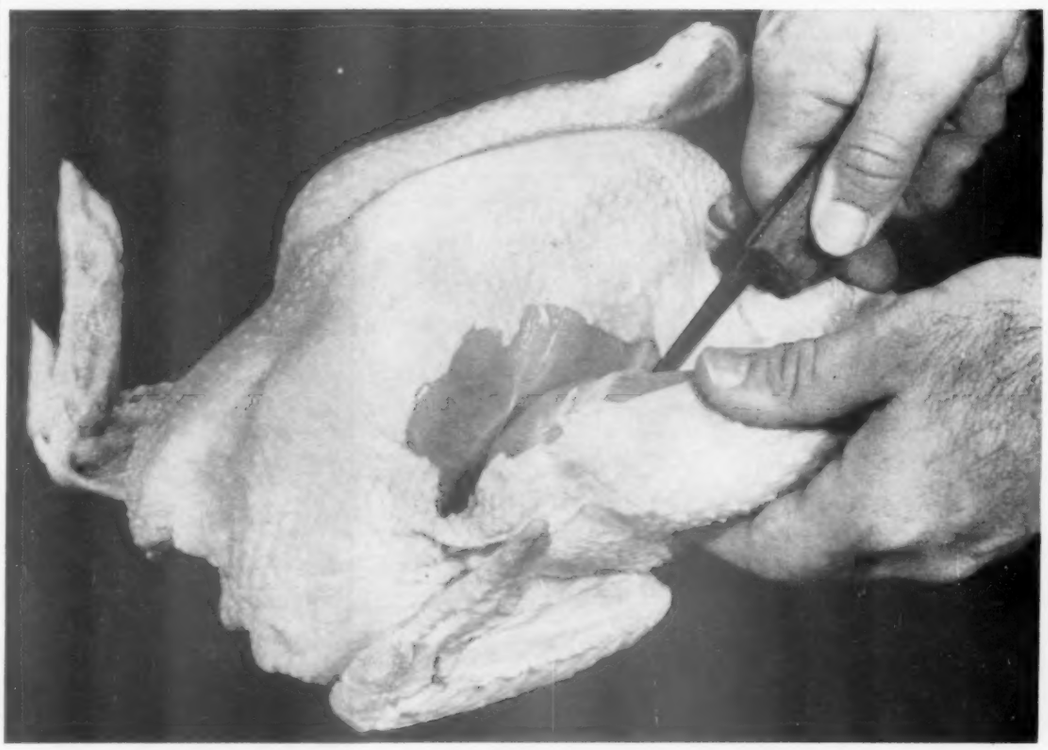

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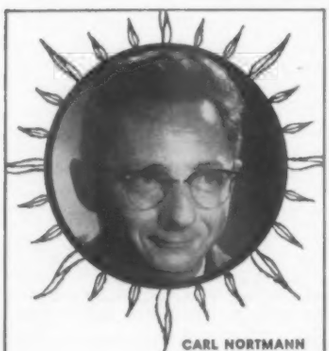

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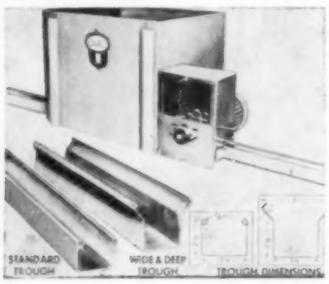
No. 7782—Open Trough Mechanical Feeder

An open trough type mechanical feeding system has been announced by Oakes Manufacturing Co.

The feeder features two new heavy gauge types of trough—the standard type with new curled-edge that prestresses the trough for greater structural strength and saves feed, and the "wide and deep" trough that is designed for feeding larger birds with larger feed capacity and for conserving feed.

The new feeder also features the "big-link" feed chain that has only 4.8 links per foot of chain. Longer links with less stretch scoop up and carry feed instead of pushing it.

The trough system can hang from the ceiling or set on the floor with heavy porcelain legs. The hopper, with 400 lb. feed capacity, has crank adjusted legs and a sealed ¾ h.p. gear motor drive power unit that needs no lubrication, according to the manufacturer.



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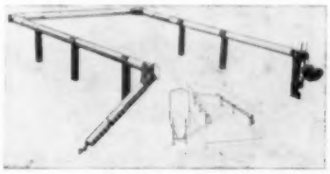
No. 7780—'Right Angle' Feeding System

The Bazooka H-40 Right Angle Automatic Feeding System manufactured by the Wyatt Manufacturing



Co., Inc., is designed to provide a new way to lower the cost of feeding dairy cattle, hogs and poultry.

A fractional horsepower motor is required to power the feeding system, saving electricity. Feed flows from left to right around one, two or three right angle corners. The system has extendable features up to 200 ft. in length.

It is said that, in good capacity up to 100 cu. ft. per hour, the four-inch system handles all types of feeding materials and keeps feed completely separate from the gears.

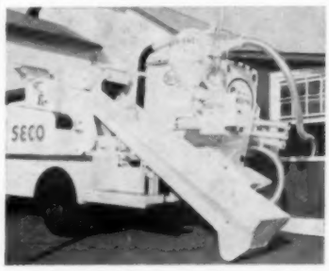
For additional information check No. 7780 on the coupon and mail.

No. 7779—Mobile Mill Development

A new system, Seco "Weigh-VAC," which weighs and conveys materials into the mobile feed mill in one operation, has been developed by Seco, Inc.

The "Weigh-VAC" loads the mobile unit from the farmer's bin or other desired location, drawing all small grains, supplements or shelled corn into the feed table at the rate of one ton every 3-7 minutes. There is a scale incorporated that weighs the material as it goes into the mobile mill—to give precision in the processing of formula feeds.

It is a vacuum-type unit which draws the grains or supplements from the bin into the mobile unit and weighs the materials at high capacity. The "Weigh-VAC" is incorporated at the side of the mixer, above the traveling feed table. It may be added to mobile mills already in the field.



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No. 7778—Baby Pig Anemia Drug

Pig-Iron 100, a new product for the prevention or treatment of baby pig anemia is being marketed by Dr. Salsbury's Laboratories. Pig-Iron 100 is double the strength of the previous iron-injectible product marketed by the company.

The company states Pig-Iron 100 is economical to use. Only 1 cc. per pig is needed for either prevention or treatment—for prevention, 1 cc. at 2-4 days of age; for treatment, 1 cc. at 7-21 days.

For additional information check No. 7778 on the coupon and mail.

No. 7781—Animal Bacterin Carton

A new carton designed to enhance product identification and make refrigeration storage easier has been introduced by American Scientific Laboratories, Inc. (ASL). The "window" carton will be used for the company's animal bacterin line, replacing the cylinder which ASL pioneered for bacterin packaging nearly 40 years ago.

In two shades of blue, the trim design incorporates the new ASL trademark, which will be used extensively along with the slogan, "Your partner in animal health management," in promotional materials of new and present line products.

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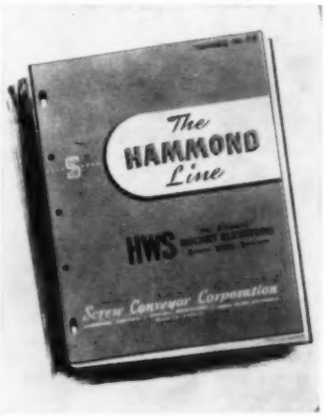
No. 7784—Bucket Elevator Catalog

Screw Conveyor Corp. has announced completion of a new bucket elevator catalog, now ready for distribution. The catalog features a series of "in stock" and "non stock" bucket elevators.



These "HWS" bucket elevators are designed for handling small grain, mill stock and similar free-flowing materials. Many individual elevator features are detailed and illustrated.

For a copy of the catalog check No. 7784 on the coupon and mail.

No. 7783—Mobile Feed Plant

Mooers Manufacturing Co. has entered the single engine mobile feed plant picture with what the company terms an "extremely rugged unit."

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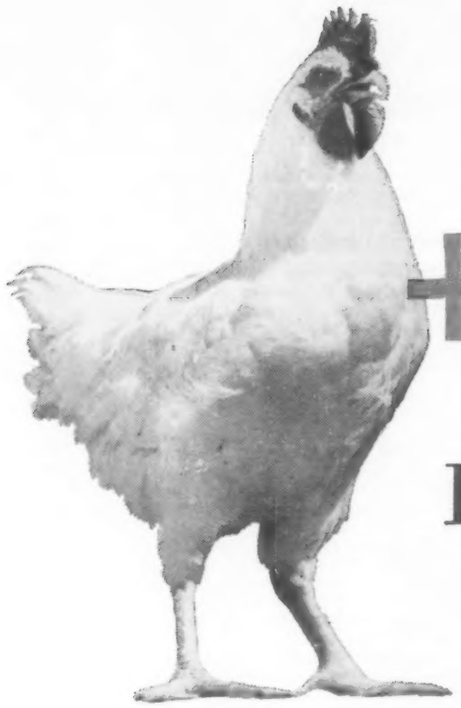

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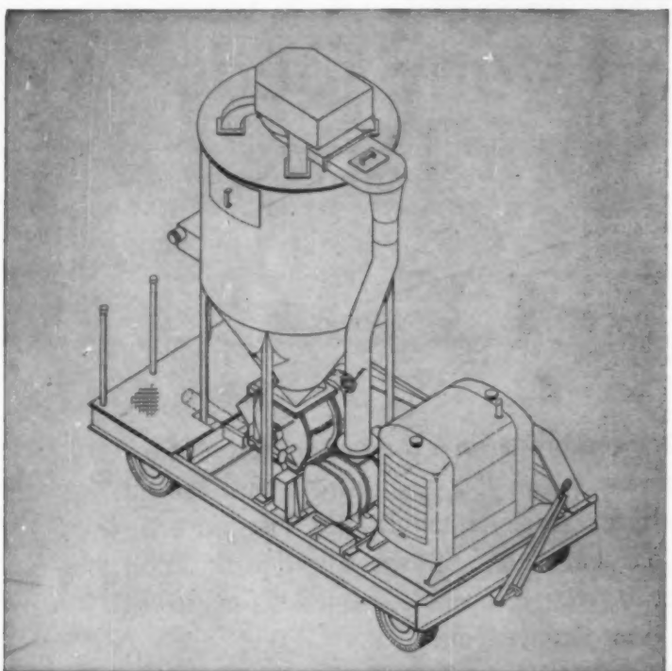

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The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7722—Service and equipment brochure, General American Transporation Corp.

No. 7723 — Grain drying bulletin, Farm Fans, Inc.

No. 7724 — Grain temperature probe, Douglas Chemical Co.

No. 7725 — Plastic egg collection flat, Automatic Poultry Feeder Co.

No. 7726 — Scale control system, Cardinal Scale Manufacturing Co.

No. 7727 — Pig starter additive, Thompson-Hayward Chemical Co.

No. 7728 — Molasses pellet mill, Sprout, Waldron & Co., Inc.

No. 7729 — Poultry house plans, Keen Manufacturing Corp.

No. 7730 — Hog disease control guide, Vineland Laboratories, Inc.

No. 7731—Baler twine, Shellbuilder Co.

No. 7732 — Polyvalent bronchitis fraction, Delaware Poultry Laboratories, Inc.

No. 7733 — Protein concentrate, Knudsen Creamery Co.

No. 7734—Dehydrated alfalfa booklet, American Dehydrators Assn.

No. 7735—Formulation service, Peter Hand Foundation.

No. 7736 — Continuous flow grain dryer, Ace Supply & Equipment Co., Inc.

No. 7737—Literature on die cover, Sprout, Waldron & Co., Inc.

No. 7738—Portable moisture tester, Seedburo Equipment Co.

No. 7739—Booklet on dehydrated alfalfa, American Dehydrators Assn.

No. 7740 — Polyethylene valve insert, Union Bag-Camp Paper Corp.

No. 7741—Grain storage building, Butler Manufacturing Co.

No. 7742—Premix convenience pack, Vit-A-Way, Inc.

No. 7743—Portable grinder-mixer, Wetmore Pulverizer & Machinery Co.

No. 7744—Concentrate storage bin, Leach Manufacturing Co.

No. 7745 — Fowl cholera bacterin, Dorn & Mitchell Laboratories, Inc.

No. 7746—Poultry watering trough, L. A. Pockman Manufacturing Co.

No. 7747—Poultry vaccines, L & M Laboratories.

No. 7748 — Automatic clearing valve, Myers-Sherman Co.

No. 7749 — Slide diverter valve, Sprout, Waldron & Co., Inc.

No. 7750—Foot rot bulletin, William Cooper & Nephews, Inc.

No. 7751 — Screw conveyor brochure, Thomas Conveyor Co.

No. 7752 — Bag, carton printer, Minneapolis Sewing Machine Co.

No. 7753—Antibiotic sales premium, Merck & Co., Inc.

No. 7754—Brochure on equipment, Pulverizing Machinery Co.

No. 7755—Make-up air units, Robbins & Myers, Inc.

No. 7756—Medication purchase premium, Hess & Clark.

No. 7757—Four vibrators, Viber Co.

No. 7758—Guarantee on water bowl, Starline, Inc.

No. 7759—Folder on jetslingers, Link-Belt Co.

No. 7760—Metering of dry materials, Thayer Scale Corp.

No. 7761—Sow milking tablets, Agri-Tech, Inc.

No. 7762—Automatic bag filling, closing, Bemis Bro. Bag Co.

No. 7763—Feed phosphate film, International Minerals & Chemical Corp.

No. 7764—Hog farrowing unit, Big Dutchman Automatic Poultry Feeder Co.

No. 7765—Tracer technique brochure, Micro Tracers, Inc.

No. 7766 — Feeder specification data, B-I-F Industries.

No. 7767—New mixer model, Rapids Machinery Co.

No. 7768—Larger calf tablet jar, Hess & Clark.

No. 7769—Building lining material, American Sisalkraft Co.

No. 7770—Drag-type conveyor system, Industrial Machinery Co.

No. 7771—Brochure on drum separators, Eriez Manufacturing Co.

No. 7772—Mobile unit for grain rolling, Daffin Manufacturing Co.

No. 7773—Pneumatic conveyor for marine use, Myers-Sherman Co.

No. 7774—Screw elevator bulletin, Fort Worth Steel & Machinery Co.

No. 7775—Sedimentation test kit, Burrows Equipment Co.

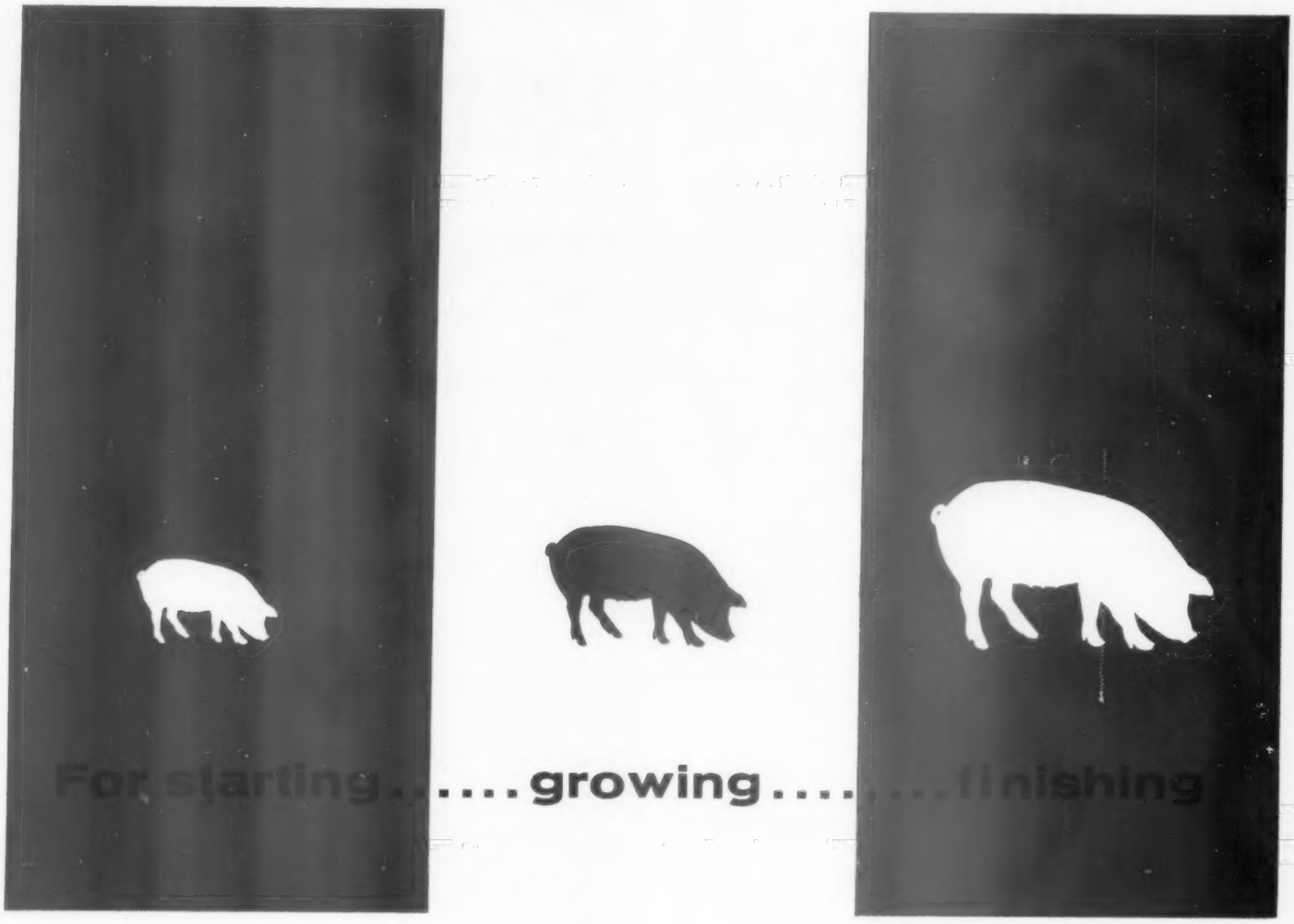
No. 7776—Feed supplement, Philip R. Park, Inc.

No. 7777—Information on sedimentation test kit, Seedburo Equipment Co.

ARE BETTER DAYS AHEAD ?

*Based on data From U.S.D.A.

BROILER PRICES—In recent weeks, broiler prices have not responded to a greater than normal seasonal reduction in marketable supplies, as shown in this chart prepared by the National Broiler Council. With only 6% increase in domestic supply from Aug. 1 to Nov. 15 over the same period a year ago, prices were down 26%. In the first quarter of 1961, a 6% increase in domestic supply resulted in a price decrease of only 5%, in comparison to the same period in 1960. For the remainder of 1961, 5% less marketable supply compared to 1960, is indicated.



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PRO-STREP *(penicillin and streptomycin)* has been tested against other commonly-used antibiotic feed supplements . . . on different farms . . . in different seasons. Results show that, for increased weight gains, improved feed efficiency, scours protection and greater net profits—PRO-STREP does the best job . . . from start to market!

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MERCK CHEMICAL DIVISION
MERCK & CO., INC., RAHWAY, N. J.

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THE VITREN WAY—

You can reduce your feed costs with custom formulated feeds using...

VITREN offers complete individual custom formulation service for their customers with full consideration given to their mixing facilities and current market prices on all ingredients. VITREN is equipped and qualified to serve you best. You can use VITREN's SERVICES whether your present volume is large or small. Write or telephone for complete information.

VITREN gives more personalized ...Better Service!

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Market specialist Joe Joffe at Dannen Mills, Inc. can buy or sell your feed ingredients at the right price.
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St. Joseph, Missouri
Dannen Mills, Inc.
Grain & Jobbing Division

DANNEN

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

Jan. 31—Beef Cattle Study Day; Agricultural Experiment Station, University of Arkansas, Fayetteville; Dr. E. M. Cralley, station director.

Feb. 6-7 — Hoosier Turkey Trot; Memorial Union, Indiana University, Bloomington; Turkey Dept., Indiana State Poultry Assn., Inc., Poultry Science Bldg., Purdue University, Lafayette, Ind.

Dec. 11-15—Stockmen's Short Course; Washington State University, Pullman; Dr. M. E. Ensminger, chm., Animal Science Dept.

Dec. 13—American Society of Agricultural Engineers; Palmer House, Chicago; grain storage and feed processing session, cooperative program sponsored by ASAE and Grain Processing Machinery Manufacturers Assn.; sec., GPMMA, John Wessman, 400 W. Dartmouth Rd., Kansas City 13, Mo.

Dec. 13-15—Grain and Feed Dealers Conference; Kansas State University, Manhattan; Hugh J. McDonald, Dept. of Agricultural Specialists, Extension Division, Waters Hall.

Dec. 16—Kansas Veterinary Nutrition Conference, Kansas State University, Manhattan; sponsored by K-State; Kansas Veterinary Medical Assn.; Midwest Feed Mfrs. Assn., and Kansas Formula Feed Manufacturers, Larry Younkin, Supersweet Feed, Salina, Kansas, president.

1962

Jan. 4-5—Minnesota Poultry Hatchery Assn.; Radisson Hotel, Minneapolis, Minn.; sec., L. L. Baumgartner, Litchfield, Minn.

Jan. 8-9 — Kansas Formula Feed Conference; Kansas State University, Manhattan; chm., Prof. T. B. Avery, Poultry Science Dept., West Waters Hall.

Jan. 9-11—National Turkey Federation; Memorial Auditorium, Dallas, Texas; co-headquarters hotels, Baker and Adolphus; sec., M. C. Small, Box 69, Mount Morris, Ill.

Jan. 19-20—Florida State Poultry Producers Assn.; San Juan Hotel, Orlando; sec., Tom Chesnutt, P.O. Box 11236, St. Petersburg 33, Fla.

Jan. 21-23—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

Jan. 21-24—Farmers Grain Dealers Association of North Dakota; Civic Memorial Auditorium, Fargo; sec., Lloyd C. Hanson, 513 Black Bldg., Fargo.

Jan. 22—Nevada Feed Confeernce; University of Nevada, Reno.

Jan. 23-27—New Jersey Farmers Week and Farm Show (Jan. 23-25); Trenton Armory; sec., Phillip Alampi, New Jersey Department of Agriculture, Trenton 25.

Jan. 28-30—Midwest Feed Manufacturers Assn.; Shamrock - Hilton Hotel, Houston, Texas; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

Jan. 29-31 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 30-31—Illinois Agricultural Industries Forum; University of Illinois, Urbana, Ill.

Jan. 31—Louisiana Livestock Producers Day; Louisiana State University, Baton Rouge 3; chm., Dr. A. M. Mullins, Animal Industry Dept.

Jan. 31-Feb. 1 — Illinois Nutrition Conference; University of Illinois, Urbana; chm., Dr. Carl L. Davis, Dairy Science Dept.

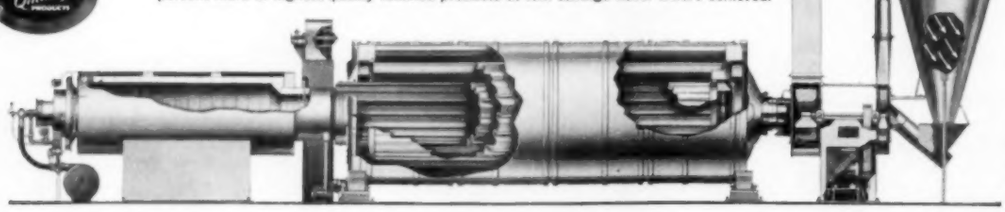
Jan. 31 - Feb. 1 — New Hampshire Poultry Health Conference; University of New Hampshire, Durham; Richard Warren, Poultry Science Dept.

Feb. 1—Boston Grain & Flour Exchange Annual Banquet; Parker

New HEIL Dryers combine 15-25% more capacity with new fuel economy

HEIL Quality Products

Cutaway view of complete Heil dryer. New, compact 3-stage drum produces 15 to 25 percent more of highest-quality finished products at fuel savings never before achieved.



The standard of comparison since 1930 — now Heil dryers are more efficient than ever:

1. You get 15 percent more capacity using the same amount of fuel.
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The extra output and fuel savings are made possible through improved drum design and other refinements.

Additional ahead-of-the-field advantages include compact design, more effective drying, low original cost, as well as low operating cost and high quality of product—for which Heil has always been famous.

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Enzymes that work are here now!

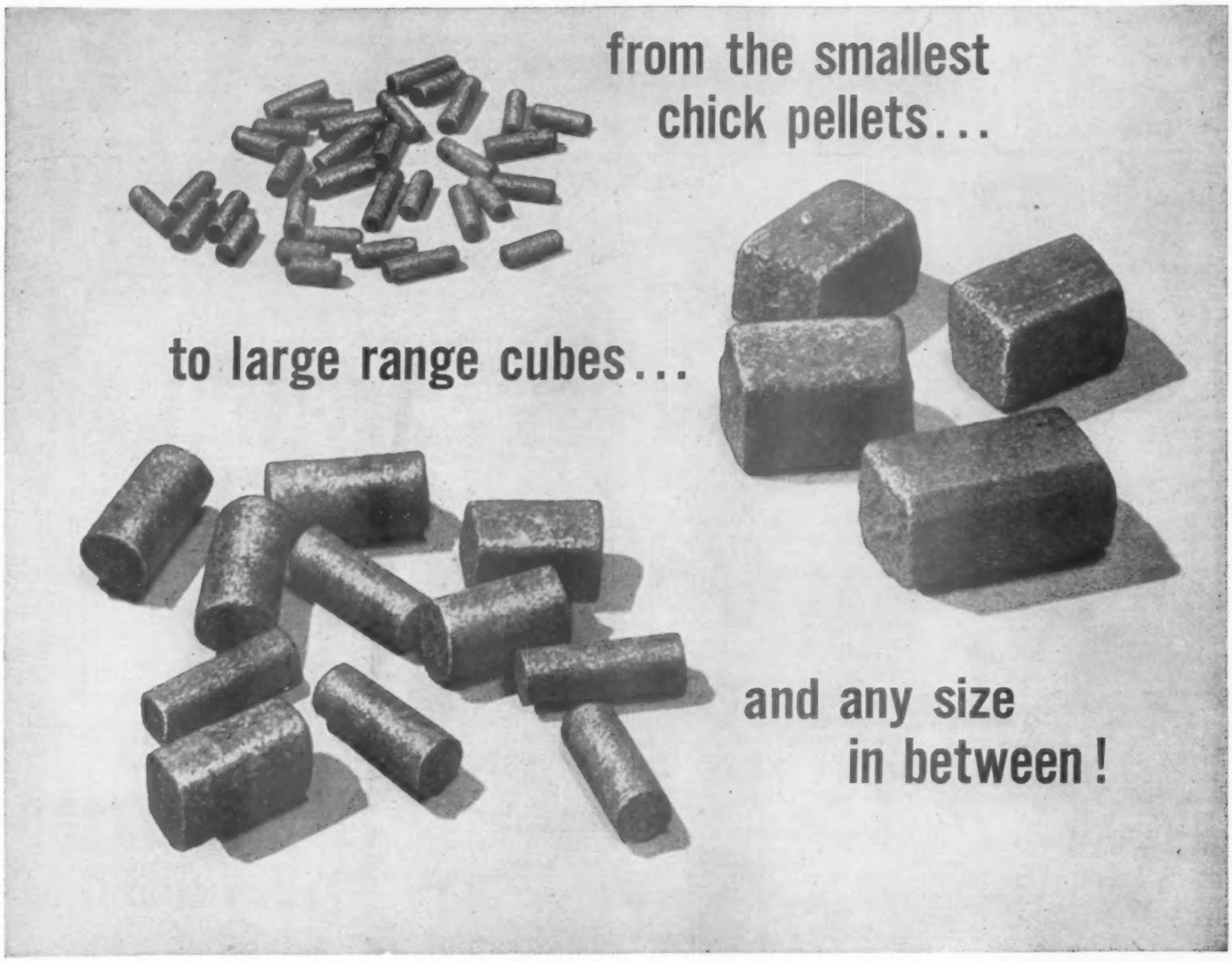
NOPGRO® WORKS

See page 15

Fight TB

Use Christmas Seals

PACO makes Pellets best!



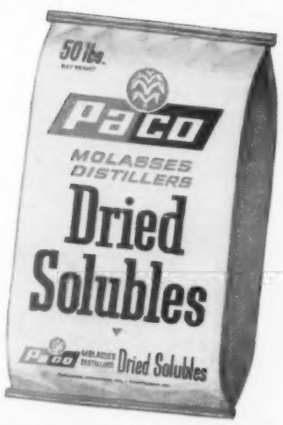
Pellets made with Paco mean repeat business, because Paco-ized pellets are entirely different from any other pellet.

Paco is a feed ingredient in itself, supplies plenty of essential nutrients for greater feed conversion and productivity. Its rich, molasses flavor adds palatability to all types of pelletized feed.

"Fines" are a thing of the past with Paco, because pellets form better and hold their shape until they are fed! That means less waste that normally increases feeding costs. Paco-ized pellets are glossy, slick in appearance, hold down choking dust in cattle feeds.

You can use Paco with confidence. Once customers see, smell and experience the goodness of Paco-ized pellets, once they watch meat, milk or egg production go up—you're in for additional business.

Get Paco, packed in convenient-to-use 50-lb. bags. Write us for information on pelleting and farm uses of Paco.



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CALENDAR FOR 1961-62

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House, Boston; tickets, Raymond C. Hall, H. K. Webster Company, 177 Milk Street, Boston, Mass.

Feb. 1—Missouri Turkey Day; University of Missouri, Columbia; sec., Missouri Poultry Improvement Assn.,

Feb. 1-2—Oregon Animal Industry Conference; Oregon State University, Corvallis, Ore.; co-sponsored by the Oregon Feed & Seed Dealers Assn. and Oregon State University; chm., Bill Eggimann, Dairy Cooperative Assn., 2613 S.E. 8th Ave., Portland.

Feb. 2-3—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., Roy C. Munson, 2200 University Ave., St. Paul 14, Minn.
E. M. Funk, Box 568, Columbia.

Feb. 4-6—Wyoming Grain, Feed & Seed Dealers Assn.; Townsend Hotel, Casper, Wyo.; sec., Everett L. Berry, Box 118, Sheridan, Wyo.

Feb. 5-7—Association of Southern Agricultural Workers; Jacksonville, Fla.

Feb. 7-9 — American Dehydrators Assn.; Stardust Hotel, Las Vegas, Nev.; Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 9-11 — Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 67 E. Madison, Chicago 2, Ill.

Feb. 12 - 13 — Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry and Range Management Dept.

Feb. 14-15—Pacific Northwest Feed Mill Production School; Benjamin Franklin Hotel, Seattle; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 15-16 — Utah Feed Manufacturers & Dealers Assn. Annual Nutrition Conference and Meeting; The Newhouse Hotel, Salt Lake City; sec., Dr. Lawrence Morris, Brigham Young University, Provo.

Feb. 16 — Washington State Feed Assn. annual convention; Benjamin Franklin Hotel, Seattle; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 18-20 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., George G. Greenleaf, P.O. Box 151, Worthington.

Feb. 20 - 21 — Virginia State Feed Convention and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; sec., Virginia State Feed Assn., J. Paul Williams, 615 E. Franklin St., Richmond 19, or Prof. Paul M. Reaves, Dairy Science Dept., Virginia Polytechnic Institute, Blacksburg.

Feb. 23—National Feeder Finance Credit Group; Curtis Hotel, Minneapolis, Minn.; sec., R. Lindholm, 502 Thorpe Building, Mpls. 2.

Feb. 26 - March 1 — Colorado Livestock Days; Colorado State University, Fort Collins; chm., Dr. C. D. Story, head, Animal Science Dept.

March 2-3—Oklahoma Feed Industry Conference and Work Shop; Oklahoma State University, Stillwater; Dr. Rollin H. Thayer, chm., Poultry Science Dept.

March 4-6—Nebraska Grain & Feed Dealers Assn.; The Cornhusker Hotel, Lincoln; sec., Howard W. Elm, Terminal Bldg., Lincoln 8, Neb.

March 8 - 9 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D. Creek, Poultry Dept., University of Maryland, College Park.

March 13—Illinois Swine Growers Day; Univerity of Illinois, Urbana, Ill.

March 15-16—Oregon Feed & Seed Dealers Assn.; Sheraton Hotel, Portland; sec., Russ Hays, Lewis Bldg., Portland 4.

March 15-17 — Pacific Dairy and Poultry Assn.; Biltmore Hotel, Los Angeles, Cal.; sec., Lloyd J. Powers, 1304 E. 7th St., Los Angeles 21.

March 19-21—Poultry and Egg National Board; Palmer House, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

March 21-23—Grain & Feed Dealers National Assn.; Denver - Hilton Hotel, Denver, Colo.; Secretaries Circle meetings March 19-20; sec., Herbert L. Sharp, 401 Folger Bldg., 725 15th St. N.W., Washington, D.C.

March 25 - 30 — Grain Elevator & Processing Superintendents; Town House Motel, Omaha, Neb.; sec., Dean M. Clark, 1115 Board of Trade Bldg., Chicago 4, Ill.

March 28—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; Dr. Lawrence E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

March 28—Commercial Egg Clinic; Texas A&M College, College Station; B. C. Wormeli, Extension Poultry Husbandman.

April 5—Purdue Egg Day; Purdue University, Lafayette, Ind.; chm., David D. Jackson, Poultry Science Dept.

April 9-10 — National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 10-12—Animal Health Institute; Statler-Hilton Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines 9, Iowa.

April 13 — Illinois Cattle Feeders Day; University of Illinois, Urbana.

April 18—Nebraska Feeders Day; University of Nebraska, Lincoln; chm., Dr. Robert M. Koch, Animal Husbandry Dept.

April 26-28 — Texas Grain & Feed Assn.; Hotel Texas, Ft. Worth; sec., R. B. Bowden, 504 Ft. Worth Club Bldg., Ft. Worth 2.

April 26-28—California Hay, Grain & Feed Dealers Assn.; Biltmore Hotel, Los Angeles, Cal.; sec., Leo L. Johnson, 1400 10th St., Sacramento 14, Cal.

April 26-28—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

April 27 — Indiana Cattle Feeders Day; Purdue University, Lafayette; chm., Dr. W. M. Beeson, Animal Science Dept.

May 4 - 5 — Illinois Grain Dealers Assn.; St. Nicholas Hotel, Springfield, Ill.; exec. sec., Donald E. Palmer, 910 Lehmann Bldg., Peoria, Ill.

May 7-9—Association of American Feed Control Officials; Sheraton-Blackstone Hotel, Chicago, Ill.; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

May 10-11 — Alabama Poultry Industry Assn. Convention and Poultry Jubilee; Dinkler - Tutwiler Hotel, Birmingham, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

May 10-12—American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 54.

May 27-28—Missouri Grain & Feed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 8 — Poultry Coronation Banquet; Dinkler Plaza Hotel, Atlanta, Ga.; sec., Abit Massey, Georgia Poultry Federation, Box 493, Gainesville.

June 28-30—Canadian Feed Manufacturers National Assn.; Sheraton Brock Hotel, Niagara Falls, Ontario, Canada; contact, Gary E. Young, 554 Lakeshore Blvd. East, Toronto 2.

July 13-17—Georgia Feed Assn.; Tides Hotel, St. Petersburg, Fla.; sec., Will L. Kinard, Suite 210-3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

July 17-19—American Poultry Congress & Exposition; St. Louis, Mo.; sec., American Poultry & Hatchery Federation, Don M. Turnbull, 521 E. 63rd St., Kansas City 10, Mo.

Aug. 13-18 — 12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Socity, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

Aug. 24—Purdue Swine Day; Purdue University, Lafayette, Ind.; chm., R. A. Pickett, Animal Science Dept.
Dealers Assn.; State Office Bldg., Es-

Sept. 5-7—Cornell Nutrition Conference; Cornell University, Ithaca, N.Y.; chm., Dr. R. J. Young, Poultry Husbandry Dept.

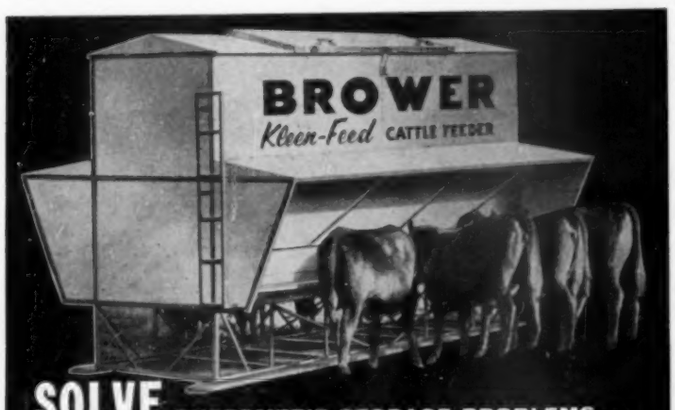
Oct. 10-12—Association of American Feed Control Officials; Sheraton-Gibson Hotel, Cincinnati, Ohio; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

Nov. 8 — Upper Peninsula Feed Dealers Assn.; State Office Bldg., Escanaba, Mich.; UPFDA, Box 342, Sault Ste. Marie.

Nov. 12-14 — Feed Production School; Continental Hotel, Kansas City; pres., Lloyd S. Larson, Feed Production School, Inc., 20 W. 9th St. Bldg., Kansas City 5, Mo.

1963

March 24-29 — Grain Elevator & Processing Superintendents; Commodore Perry Hotel, Toledo, Ohio; sec., Dean M. Clark, 1115 Board of Trade Bldg., Chicago 4, Ill.



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Now in two sizes: 15 ft. feeder has 250 bushel capacity . . . 7½ ft. feeder has 125 bushel capacity

- Serve More Customers in Less Time . . . Lower Delivery Overhead . . . Increase Sales Volume
- BIG CAPACITY— Fill Only Once a Week
- Feed Stays Fresh, Clean, More Palatable — Cattle Eat More.

Now . . . a self-feeder for cattle that's profitable to sell! Solves customers' bulk feed storage problems . . . increases profits through bigger volume sales . . . gives time to develop new business. Two sizes: large size feeds 100 cattle a week on one filling; the other, 50 head. Special hopper & trough design keeps feed clean, fresh, more palatable. Cattle eat more . . . make faster, more profitable gains.

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STABILIZED HETROGEN K*

HAS BEEN PROVEN EFFECTIVE IN REDUCING THE INCIDENCE OF BLOOD SPOTS†

For only 18¢ per ton you can fortify all your laying feeds with Stabilized Hetrogen K at the 4 gram per ton level

Stabilized Hetrogen K is the new kind of vitamin K premix recently developed by Heterochemical Corporation. It's the only vitamin K premix with proven superior stability during storage and mixing.

Available in an economical range of potencies on calcite or soy meal carriers. With stabilized Hetrogen K the potency in the bag matches the potency on the tag yet it costs no more than less stable forms of vitamin K.

*Patents Pending

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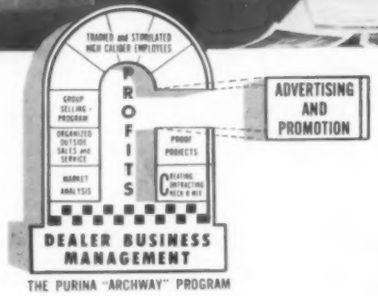
Meeting the challenge of the '60's with service

PROVE WELL BE BIGGER THAN AVERAGE AT 4 MONTHS
PURINA FARM CALVES FRESHEN EARLY-GET IN PRODUCTION MONTHS SOONER
WE LOVE IT!
PURINA NURSING CHOW
• Easy to mix and feed
• Helps prevent scours
• No danger of infection from nurse cows
• economical

This team produces effective local advertising for Farmers Elevator, Purina Dealership in Medford, Wisconsin. Fred Miller (left), salesman for the dealership, gathers data and pictures of Purina Feeders. He writes the text. Clifford J. Carlson (center), advertising manager of the Medford Star News, edits the writing and makes the layouts. William F. Miller (right), owner of the elevator, and "Sales Partner" Skamser (background) plan campaigns.



THE PURINA "ARCHWAY" PROGRAM

Purina Dealer Advertising geared to serve local agriculture

Purina Dealer Advertising earns its high readership by being helpful to farm folks. Planned by experts, its mission is to serve animal agriculture as well as to sell Purina products.

Materials available to Purina Dealers are geared to the specific regions in which they are to be used, both in media and in content. Individual assistance in advertising and promotion is available to dealers, all the way from Checkerboard designs for their buildings and trucks to complete campaigns. Every phase of advertising is aimed at creating and keeping customers. Purina shares the cost of advertising done by qualified dealerships.

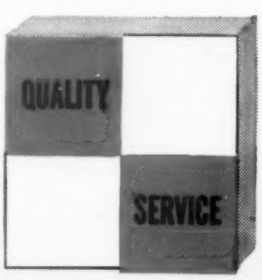
Local Purina advertising has pointed the way for many farmers to produce milk, meat or eggs with less labor and expense. It has pointed the way for many farm folks to pleasant and profitable business relationships at the Stores with the Checkerboard Sign.

Why the Purina Franchise is the Most-Sought Rural Retail Opportunity

1. Dealers who follow the Purina Archway Program realize worthwhile profits on their investments.
2. Purina offers a well-rounded money-management program for Dealers.
3. The Checkerboard is rural America's best-known trademark.
4. There's a Purina Chow especially adapted to every livestock and poultry production situation.
5. Purina offers complete programs of breeding, management, sanitation and feeding.
6. Dealers are backed by one of the world's outstanding commercial research facilities.
7. Purina provides a complete line of research-proved sanitation products.
8. A coast-to-coast network of mills serves Purina Dealers.
9. The Purina Salesman and the Dealer have a "Sales Partnership" relationship.
10. The Ralston Purina Company is the world's largest feed manufacturer.

There are progressive, independent Purina Dealers covering most areas. If you are in one of the few remaining markets where the Purina Franchise is available . . . and if you are interested in an outstanding investment opportunity, write: RALSTON PURINA COMPANY, Department F-121, St. Louis 2, Missouri.

W. N. SKAMSER, Purina "Sales Partner" of dealerships in central Wisconsin, knows the power of local advertising. Each year, he holds a planning conference with each of his dealerships. In these sessions, "Sales Partner" Skamser and the Dealer make step-by-step programs, covering 12 months. Campaigns usually include case histories of local Purina Feeders . . . weekly advertisements in newspapers . . . signs . . . store and truck identification, and Checkerboard Service, a farm magazine published for distribution with the compliments of Purina Dealers.



PURINA . . . YOUR "PARTNER" IN SERVING ANIMAL AGRICULTURE

Egg Quality and On-Farm Mixing Among Topics at Nebraska Event

By DR. FOSTER G. OWEN
University of Nebraska

LINCOLN, NEB. — Among the questions considered during the 13th annual Nebraska Feed and Nutrition Conference on the University of Nebraska campus here were: "How can nutrition improve egg quality?" and "What about the economics of on-the-farm mixing?"

The answers to these and other questions were provided before the conference ended.

It was reported that addition of sufficient dehydrated alfalfa or corn gluten meal to a corn or milo ration will produce eggs with an excellent yolk color. This is especially important for producers of eggs for the processor of liquid or frozen eggs. A deeply pigmented yolk is preferred for this market.

Various factors concerned in deciding whether to mix feed on the farm were brought out by one of the speakers. The major factors to consider are investment costs and volume of mixing required. Other factors discussed were labor costs and availability, ingredient prices, and distance from service.

Processing

Another speaker discussed processing controls and engineering problems in milling. A new method of measuring pellet durability — the "tumbling can" technique—was presented. The "fines" resulting from the new method correlated well with the amount produced in a miniature handling machine which simulates actual mill handling operations.

A panel of scientists was called on to bring together present-day knowledge on the use of urea in wintering rations for beef cattle. One research worker warned against the use of high amylose corn in certain types of rations.

Variety of Topics

The conference, sponsored by the University of Nebraska in cooperation with the Nebraska Grain & Feed Dealers Assn. and the Midwest Feed Manufacturers Assn. dealt with a variety of topics, some of which are summarized below:

MEASURES OF FEED QUALITY—What assurance is there in mixing operations that the protein calculated for a mix will be that which is produced? Dr. H. B. Pfost, department of flour and milling industry, at Kansas State University, reported an extreme variability in the protein content of milo—5% to 12%—especially since introduction of hybrids. This might result in a much higher requirement of oil meal and greatly increase the cost of the feed if a low protein milo is being used. A rapid protein test is recommended during the initial mixing to assure an adequate protein level. It was suggested that sampling of feeds being bagged is desirable since some separation in the mixer may take place with ingredients with certain physical properties. This should serve to check on various portions of a batch.

Dr. Pfost also discussed measures of particle size. He suggests a modulus of uniformity, consisting of the ratio of the coarse, medium and fine particles. They have found that even a pellet mill is a relatively good grinder and that a roller mill will give a product of more uniform particle size than a conventional grinding mill.

A simple pellet durability test consisting of a mechanically tumbled can was reported to yield an amount of "fines" which correlated strongly with the amount produced in a miniature laboratory mill which simulates actual mill operations. This method is used on about 1 lb. of pellets, is simple, rapid and involves enough pellets to constitute a good sample.

Other tests on pellets indicated that the fineness of grind (⅛", ¼" or larger roller product) has little influence on "fines" but steam treatment reduced the "fines" considerably.

NUTRITIONAL FACTORS AFFECTING EGG YOLK QUALITY—"Egg yolk quality is the foremost problem of the industry," said Dr. T. W. Sullivan concerning the egg breaking industry of Nebraska.

Since an estimated 70% of Nebraska's eggs go to breaking plants, this is an especially important concern to this area. These plants prefer an egg yolk pigmentation which is darker than desired for "table consumption."

Dr. Sullivan, who has completed several experiments on this subject, has found that dark yolks can be obtained by simply increasing the level of dehydrated alfalfa meal and/or corn gluten meal in the ration. Eight to 10% of high quality dehydrated alfalfa meal in a yellow corn ration produced excellent yolk color and 6-10% in a milo ration produced eggs with acceptable yolk color for "table use." Large scale tests are being conducted to further test the influence of the level of alfalfa meal since preliminary tests suggest an upper limit for best production.

UREA IN WINTERING RATIONS FOR BEEF CATTLE—In summarizing available information of the use of urea in wintering rations, Dr. Walter Woods pointed out that "we need to adjust our thinking on the level of supplementary nitrogen that can be supplied as urea to forage rations." He said that up to 20% of the ration nitrogen can be supplied from urea in corn silage rations; whereas, in corn cob or hay rations the upper limit appears to be 15%.

Dr. Woods stated further, "For wintering range the data suggest that urea is inefficiently utilized." The per cent of urea in the ration or supplement should not be considered alone. The amount of supplement fed, the carbohydrate, and minerals must all be optimum to realize efficient use of urea.

"Not more than 1% urea of the total ration or 3% of the concentrate portion is a rule to follow in high energy rations," pointed out Dr. Ralph Soule, nutritionist for the Grain Terminal Assn., St. Paul, Minn. He indicated that if sufficient energy is present, the level of urea may approach one third of the total crude protein.

Dr. Soule stressed that dealers or farmers with grinders and mixers should not attempt to mix urea-containing rations, since they do not have quality control facilities required.

At present, the reason most livestock feeders select the urea-containing feeds is the price differential of $6 to $11 per ton favoring those rations, according to Dr. Soule.

ON-THE-FARM FEED MIXING—An increase in the purchase of services involving labor, equipment and buildings can be expected on those farms where present resources are now being used to near capacity, said Dr. R. J. Mutti, agricultural economics department, University of Illiois. In such cases, the operators may desire to expand their livestock enterprises and spread their managerial ability over more units. Dr. Mutti said many midwestern farmers have unused resources which might be used in a feed processing activity. These resources may include family labor, storage facilities, trucks, utility buildings, power sources and materials handling equipment. Many have or can obtain capital needed to

NEW
New type platform scale weighs down to 1/2 lb. with accuracy of 0.1%
NEW
Curved sides prevent lodging of material
NEW
Larger 12" x 15" dump gate assures instant discharge

At last, a Bulk Scale that gives the accuracy you need

Feed men find that they can't afford to be off 5% or so in their weights when mixing. They need accuracy. Now the new redesigned Weighburro assures accuracy in two important ways:

1. A new-type platform scale registers an accurate weight within plus or minus one tenth of one percent. No more guessing—you know it's right on the button.
2. The newly designed curved sides prevent any lodging of material—every bit of material that is weighed is discharged when the hopper is opened. No more clogged corners to spoil weighing accuracy.

In addition, the new larger dump gate assures instant discharge, makes mixing faster and more efficient. Capacity: Approx. 800 lb. shelled corn. Optional sideboards increase capacity 25%. Over-and-under indicator can be installed for even faster operation. Write today for more information.

BURROWS

BURROWS EQUIPMENT CO.
Dept. C-12, Evanston, Ill. • UNiversity 4-4175

There is no substitute for oyster shells for maximum calcium content . . . maximum egg shell quality

...and no better oyster shell than

EGGSHELL BRAND

Best-seller in the Northeast, it is the great egg shell builder with the guaranteed analysis of 97% Calcium Carbonate, plus highly important trace minerals.

EGGSHELL BRAND OYSTER SHELL
a product of
OYSTER SHELL CORPORATION
BALTIMORE, MARYLAND

make better use of all these resources which are available to them.

In considering the question of whether to have the ration prepared off the farm, on the farm by a custom mobile miller or on the farm with his own equipment, a farmer should consider several factors: Is there labor available? Family or hired help? For how long can the available labor be depended upon?

The speaker pointed out that the major cost in farm processing is that of equipment ownership. "The volume of feed to be processed thus becomes the key factor when trying to decide whether on-farm mixing can be a profitable venture," Dr. Mutti stated.

The trend toward automation and bulk handling of feeds on farms is really just getting started and reductions in labor requirements through avoidance of warehousing and bagging of feeds is expected to increase, according to Dr. Mutti.

A third factor influencing the decision on on-the-farm mixing is the availability and cost of ingredients or supplements. As prices of high-valued ingredients are reflected in lower mixed feed prices, the gains from combining ingredients will be less attractive to feeders. Other factors mentioned were comparative quality of the finished mixed feed, uncertainty of length of tenure, alternative possibilities for off-the-farm employment for surplus labor, and age and health of the operator.

With new conditions arising continually from changes in services offered, agricultural production, inventions and market structure, a continual examination of the question of farm-mixing can be expected.

NUTRITION AND MANAGEMENT OF SPF PIGS — The nutritional program for specific pathogen-free (SPF) pigs was reviewed by Dr. E. R. Peo, Jr., of Nebraska, as reported in a previous article in Feedstuffs.

Performance data on 7,826 SPF pigs from 789 litters over a three-year period were summarized by Dr. G. A. Young of Nebraska's department of veterinary science:

Live pigs farrowed per litter	9.9
Pigs raised to market per litter	8.3
Average 8-week weight, lb.	42
Average 5-month weight, lb.	198
Average daily gain, lb.	1.59

Certification requirements for health and performance of SPF pigs were given as follows:

1. Disqualification if any pigs in the herd have virus pig pneumonia, atrophic rhinitis, brucellosis or swine dysentery.

2. Boar pigs must weigh 170 lb. by 140 days.

3. Female pigs must weigh 150 lb. by 140 days.

4. Back fat cannot exceed 1.3 in. on boars and 1.5 in. on gilts.

Nebraska producers have been able to meet the health standards in 91% of the pig crops and the performance standards in 76% of the pig crops.

"Thus," says Dr. Young, "the methods employed to obtain SPF pigs in the disease elimination and control program have proved practical and effective."

WARNING ON USE OF HIGH AMYLOSE CORN — Feed manufacturers were urged to avoid using high amylose corn in livestock rations. Dr. Raymond Borchers, professor of biochemistry and nutrition at the University of Nebraska, said the recommendation is based on digestibility studies with rats. Studies indicated that corn with an amylose content of 50 to 77% was only 70% digestible. Ordinary corn is 100% digestible.

"There is no danger of high amylose corn being used in livestock rations at this time because it is not available in sufficient quantities," Dr. Borchers said.

"The interest in growing high amylose corn for industrial purposes could increase the availability for such corn. At the present time, high amylose corn is not available in sufficient quantities to conduct digestibility tests with large farm animals such as hogs and cows. Therefore, it is difficult to predict how digestible it will be in the more complex digestive systems. Chances are it will be less digestible in chickens than it is in rats."

Chicken Plus Turkey Equals 'Churkey'

WASHINGTON—What do you get when you breed chickens with turkeys? Dr. Marlow W. Olsen calls the result a "churkey."

An employee of the U.S. Department of Agriculture's laboratory at Beltsville, Md., Dr. Olsen has produced 31 "churkeys" by stimulating unfertilized eggs of turkeys with sperm from dark Cornish and Rhode Island Red male chickens.

Results were birds resembling chicks more than turkey poults. According to the agriculture department, this is something of a feat—comparable to breeding a toad with a frog.

The lone surviving "churkey" is an awkward, baldheaded fowl. It rests on bent legs, no longer able to bear its weight. It cries feebly when lifted.

Dr. Olsen is keeping the anomaly comfortable and well-fed as he awaits its imminent death.

IT TAKES THE WORLD'S FASTEST GROWING BIRD TO BEAT BREAK-EVEN BROILER PRICES!

Cobb White Rocks have been first for rate of growth in 9 of the last 10 official broiler tests. Write for your documented report. Distribution centers from coast to coast and overseas.

Cobb's Pedigreed Chicks, Inc.
Main Office and Breeding Farms
Concord, Mass.

FIELD TESTED & PROVEN IN USE
By Leading Feed Manufacturers!

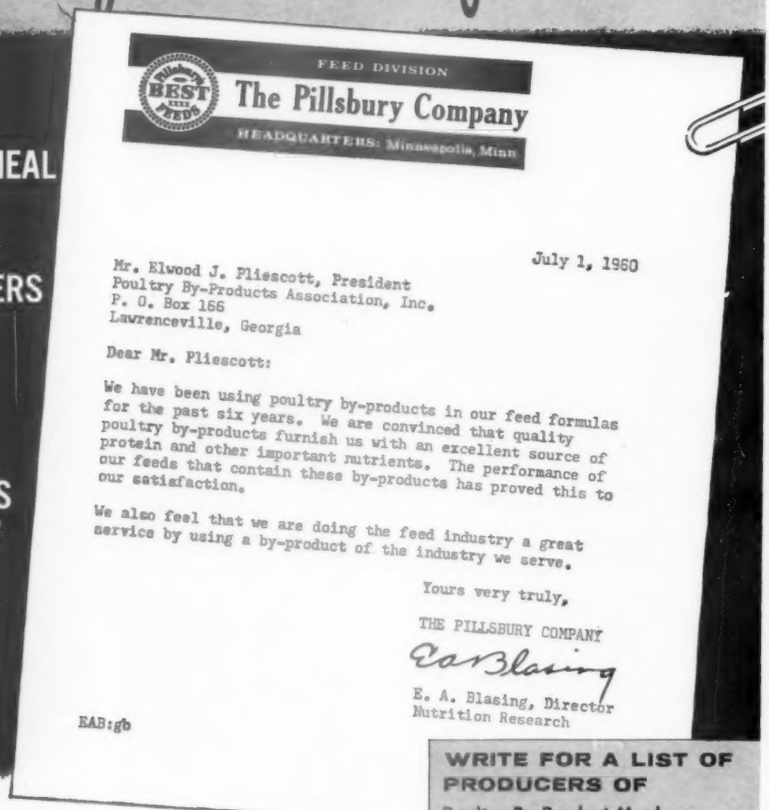
★ POULTRY BY-PRODUCTS MEAL

★ HYDROLYZED POULTRY FEATHERS

★ STABILIZED POULTRY FAT

★ BY-PRODUCTS OF THE POULTRY INDUSTRY. . .

The Poultry Industry is the user of the largest tonnage of mixed feeds in the world.



FEED DIVISION
The Pillsbury Company
HEADQUARTERS: Minneapolis, Minn.

July 1, 1960

Mr. Elwood J. Pliescott, President
Poultry By-Products Association, Inc.
P. O. Box 166
Lawrenceville, Georgia

Dear Mr. Pliescott:

We have been using poultry by-products in our feed formulas for the past six years. We are convinced that quality poultry by-products furnish us with an excellent source of protein and other important nutrients. The performance of our feeds that contain these by-products has proved this to our satisfaction.

We also feel that we are doing the feed industry a great service by using a by-product of the industry we serve.

Yours very truly,

THE PILLSBURY COMPANY

E. A. Blasing, Director
Nutrition Research

EAB:gb

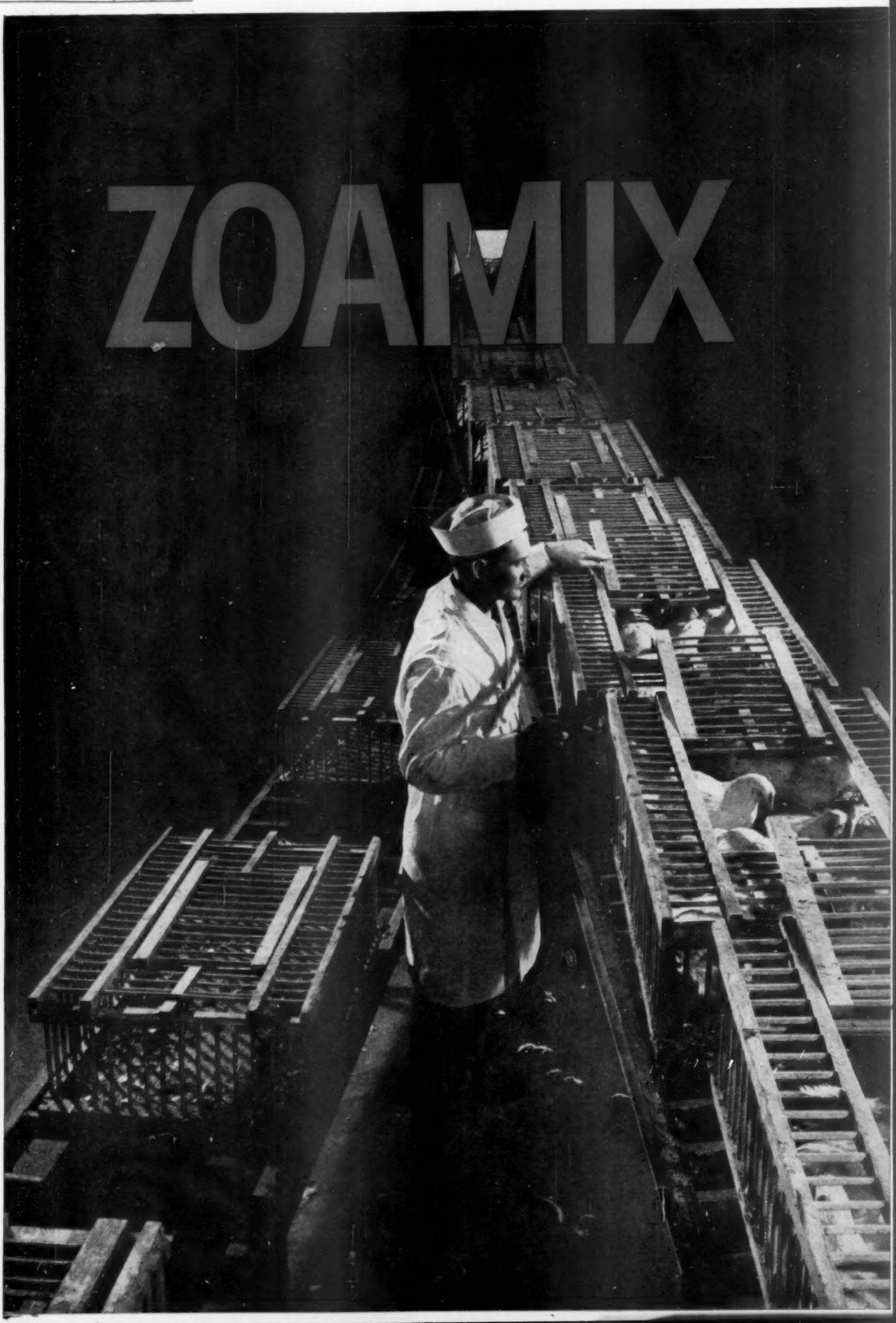
WRITE FOR A LIST OF PRODUCERS OF
Poultry By-Product Meal
Hydrolyzed Poultry Feathers
Stabilized Poultry Fat

FREE!
Pamphlet telling how you can use poultry by-products to the best advantage in your feeds. Write on your letterhead

Efficiency and economy require a combination of ingredients that give you the maximum amount of energy and nutrients with the least sacrifice of precious space in the feed bag. There is no room for ingredients of low nutritive value or for ingredients that provide one needed feature at the expense of another.

POULTRY BY-PRODUCTS ASSOCIATION, INC.
P. O. Box 166, Lawrenceville, Georgia

Buy and Sell Through WANT ADS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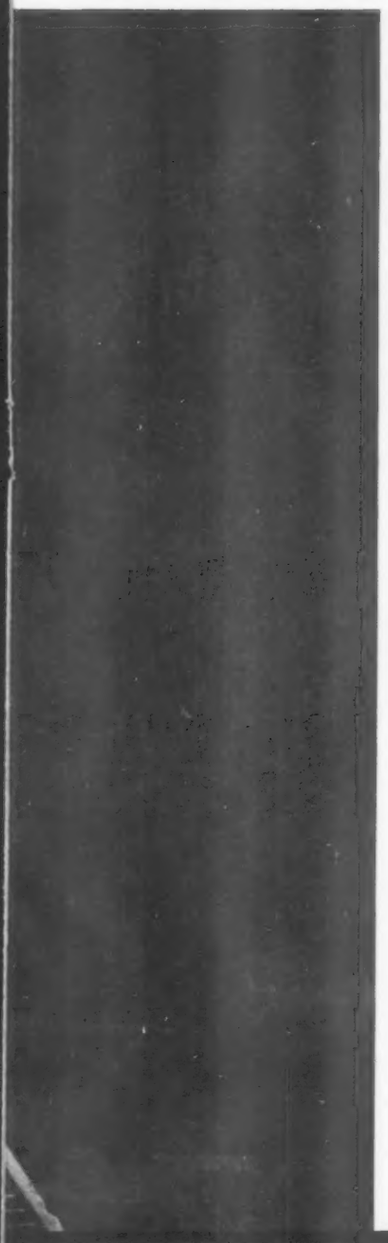

Now... approved right up to market time.

With Zoamix® coccidiostat in the feed you sell, you offer broiler growers a definite plus. Growers need not substitute a second feed. No withdrawal time is required. And birds are protected right up to the time they are marketed.

Zoamix is also approved for use on replacement birds. Under moderate exposure conditions, immunity is normally secured at 14 weeks of age.

Zoamix permits maximum rate of gain and nutrient utilization. And it won't ause injury if accidentally fed to laying hens, other farm animals, or if moderately overdosed.

Zoamix has advantages for the feed manufacturer, too. It eliminates the need for stocking an array of specific products which only tend to confuse the customer and result in costly stock duplication for you. Zoamix is economical, quick and easy to assay. There are no mixing or storage problems.

You'll make more profits . . . have fewer problems . . . more satisfied customers with Zoamix coccidiostat. For further information, and data to aid you in registration, write: THE DOW CHEMICAL COMPANY, Abbott Road Building, Midland, Michigan, Attn: Feed Industry Sales.

Free educational film. "Chemicals: Vital to Our Food Supply," a 22-minute sound and color story of the contributions of chemicals to mankind, is now available for screening or group showings. Film has many references to the poultry industry. For bookings, contact your Dow Feed Industry sales representative.

1-Minute test for Zoamix. Simple test enables serviceman to make on-the-farm or in-the-plant check for presence of our coccidiostat in feed. For further information, contact your Dow sales representative.

Polyethylene Boots. Disposable, polyethylene pull-on boots available to feed company servicemen. Helps prevent spreading disease and protects shoes. 25 pairs to a roll. See your Dow representative for details.

THE DOW CHEMICAL COMPANY DOW Midland, Michigan

Complete Cereals Processed Specially for Pet and Small Animal Foods

★ TOASTED CORN FLAKES ★ KIBBLED CORN
★ TOASTED WHEAT FLAKES ★ KIBBLED WHEAT
★ CORN GRANULES ★ KIBBLED PREMIXES

(Straight or Mixed Shipments)

Carloads — Truckloads — LCL — LTL

LAUHOFF GRAIN COMPANY

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AUBREY FEED MILLS

RED A FEEDS

LOUISVILLE, KENTUCKY

SERVING THE GREAT SOUTHEAST

Wall Chart Available . . .

1961 FEEDSTUFFS ANALYSIS TABLE

Prepared and Copyrighted by
Charles H. Hubbell, Feed Consultant, Chicago

The 1961 Feedstuffs Analysis Table, showing the analysis of more than 80 feed ingredients, is available in a large size for posting on the wall for handy reference.
The table includes data on protein, fat, fiber, mineral, energy, vitamin and amino acid content of ingredients used in feed formulation.

The large size table is 20 by 29 inches. It is available at a price of $1.00 per copy.

FEEDSTUFFS — P.O. Box 67
Reader Service Department — Minneapolis 40, Minn.

Please send ..... copy(ies) of the large size Analysis Table for which payment at $1.00 per copy is enclosed.

NAME .....
TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE..... STATE.....

TABLE 1. Specifications for Poultry Feeds—Vitamins and Trace Minerals
Levels of These Nutrients Per Pound of Feed Should Be Not Less Than the Indicated Figures

	Starting chickens 0-8 wk.	Growing chickens 8-18 wk.	Laying hens	Breeding hens	Starting poults 0-8 wk.	Growing turkeys 8-16 wk.	Breeding turkeys
Vitamin A activity, U.S.P. units	2400	2400	4000	4000	4800	4800	4800
Vitamin D, I.C. units	140	140	340	340	600	600	600
Vitamin E, I.U.	15	10	5*	15	15	10	15
Vitamin K_1, mg.	0.3	0.3	0.1*	0.2*	0.3*	0.3*	0.2*
Riboflavin, mg.	1.6	1.0	1.2	2.1	2.1	1.5	1.8
Pantothenic acid, mg.	5.0	5.0	2.5	5.0	6.0	6.0	8.8
Niacin, mg.	15.0	6.0	6.0*	6.0*	38.0	12.0*	6.0*
Choline, mg.	600	400	400	400	750	400	400
Vitamin B_{12}, mg.	0.005	0.001	0.001	0.003	0.005	0.001	0.003
Manganese, mg.	25	25	10	15	25	25	15
Iodine, mg.	0.5	0.2	0.2	0.5	0.5	0.2	0.5
Zinc, mg.	20.0	20.0	10.0	10.0	25.0	25.0	10.0

*Figures based on analogy because of lack of information on requirement of this class of poultry for this nutrient.

Poultry Feed Specifications Presented by Dr. H. R. Bird

FRESNO, CAL. — Recommended levels of essential nutrients for chicken and turkey feeds were presented by Dr. H. R. Bird, head of the poultry husbandry department at the University of Wisconsin, in a talk at the California Animal Industry Conference.

For his presentation at the California event, Dr. Bird reviewed specifications given in an article in the Dec. 31, 1960, issue of Feedstuffs and, in some instances, made revisions in accordance with recent research. The resulting specifications are presented in Tables 1, 2 and 3.

The poultry feed specifications were part of a discussion of "Man vs. Machine in Formulation of Poultry Rations." It was pointed out that in using a computer for formulation, one must decide what levels of required nutrients he will demand in the formula.

Dr. Bird went on to discuss the specifications given in the accompanying tables. He said:

"Table 1 summarizes the recommended levels of vitamins and trace minerals. These follow the NRC Nutrient Requirements of Poultry except that margins of safety have been added for the vitamins, and blank spaces conservatively left by the NRC committee have been filled with figures, with the comforting knowledge that nobody can prove these figures wrong any more than I can prove them right.

"Margins of safety have been included in the vitamin levels primarily to cover vitamin losses that may occur in manufactured feed or in ingredients before mixing. They are also intended to compensate for variations in the vitamin content of ingredients and the vitamin requirements of individual birds. In general, the figures for the water-soluble vitamins include a 20% margin of safety over the requirements. Large margins were applied for vitamins A and D; namely, 100% and 50%, respectively.

"The figures marked with asterisks in Tables 1 and 3 are based on analogy with known requirements at other ages or of other species. They are believed to be reasonable approximations of the requirements, and furthermore they are low enough in most cases so they would not exert a determining influence on the formula.

"The article in Feedstuffs, Table 1 also included thiamine, pyridoxine, biotin, folacin, magnesium, iron and copper. Further thought convinced me that these would always be present at adequate levels in any diet that a computer could devise out of any list of ingredients that I would allow, so they have been omitted here to save space.

"Levels of vitamin A could be lower than the figures in Table 1 if one were sure that the A was properly stabilized. It is believed, however, that most formulators are still using more A than Table 1 suggests. It must be remembered that most of the vitamin E will be furnished by alfalfa meal, grains, and grain products and only a small part of the recommended level needs to be added as vitamin A supplement.

"All of the figures in Table 1 are minimum figures. The designated feeds should contain at least these quantities of nutrients. It is not necessary to set maximum permitted levels. Some of these nutrients are toxic at very high levels, but the usual feedstuffs would not provide such levels, and there would be no reason to do so by abuse of special supplements.

"Table 2 summarizes recommendations for productive energy, protein, and the major minerals. Of all the nutrients, energy, protein and the amino acids are the most difficult to pin down with definite recommendations. For a vitamin or a trace

PROTECT your expensive processing equipment from these culprits

. . . with a LOW COST
KELLY DUPLEX MAGNETIC SEPARATOR

The powerful Kelly Duplex Magnetic Separator keeps dangerous tramp iron from entering your hammermill or other processing machinery. Available in any size to meet your needs, it costs nothing to operate . . . is unaffected by vibration . . . gives you unexcelled, low cost protection.

Mail coupon today!

The Duplex Mill & Mfg. Co., Springfield, Ohio
Without obligation, send me complete information on the Kelly Duplex Magnetic Separator.

NAME_____
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FEEDSTUFFS

call for
CHASE BAGS
when you need
packaging
ENGINEERED TO SELL
your product
as well as
DELIVER
the goods
!

Your package is the "picture" of your product to your customers and prospects. To make the picture attractive Chase's Art Department is ready to help you design a brand to achieve just the right effect for your purpose. Skilled color printing craftsmen follow through to give you a bag that does a top selling job.

And to make your bag serve—longer and better—we insist on the finest bag materials available, bought in the open market and thus not limited to a single source. Our "kraftsmen" turn these into the toughest bags you ever put feed, seed, fertilizer, chemicals—or anything—into.

If you want bags that are designed to sell as well as made to serve, call your Chase Man. Or write us.

CHASE BAG COMPANY
355 Lexington Avenue · New York 17, N.Y.

** A Chase Bag will make your product a Very Important Package*

MULTIWALLS · TEXTILE · PLASTIC AND LAMINATED BAGS · CONSUMER-SIZE PAPER BAGS
AND OTHER PACKAGING MATERIALS

TABLE 2. Specifications for Poultry Feeds
Productive Energy, Protein and Major Mineral Elements

	Broilers 0-6 wk.	Broilers 6-9 wk.	Replacement pullets (egg type) 0-8 wk.	Replacement pullets (egg type) 8-20 wk.	Laying & breeding hens (egg type)	Starting poults 0-8 wk.	Growing turkeys 8-16 wk.
Productive energy, Cal.	950–1100	950–1100	900–950	850–950	900–950	850–950	900–1050
Protein, %	23	20	20	15	15	28	17–20
Calcium, %	1.0	1.0	1.0	1.0	2.75**	2.0	1.25**
Phosphorus, %	0.6	0.6	0.6	0.5**	0.6	1.0	0.7**
Sodium, %	0.15	0.15	0.15	0.15	0.15	0.15	0.15

**Revised from N.R.C. figures.

mineral, the most economical level is the lowest level that will support maximal performance. However, as we increase the levels of energy and protein, we reach a point at which additional increments are increasingly expensive because they require the use of fat and of protein supplements containing 60 to 70% of protein. At this point, the chicken's performance is still being improved, but the question arises as to whether further improvement is economical. This in itself would be a nice problem for a computer, and would involve not only feed ingredient costs, but also broiler prices and data on the response of growing chickens to increasing levels of energy and protein.

"The figures for energy and protein in Table 2 and amino acids in Table 3 are in balance with each other. The absolute values are based on my opinion as to the most economical levels of energy and protein at present ingredient costs. Table 3 gives amino acid levels only for starting chicks and poults and laying hens. Reasonably good values for the later stages of growth of chickens and turkeys could be obtained by assuming that levels of all amino acids would decrease in proportion as protein decreased. The amino acid levels recommended correspond to the NRC requirement figures, except that question marks in the NRC table have been replaced with estimates which are marked with an asterisk.

"Table 2 contains four figures which depart from the NRC requirements. These changes were made on the basis of recent reports. Two involve calcium and two phosphorus.

"The reports of Titus and Petersen indicating that the 2.25% of calcium

TABLE 3. Specifications for Poultry Feeds. Amino Acids

	Chicks 20%	Laying & breeding hens Protein 15%	Poults 28%
Arginine, %	1.2	0.9	1.6
Glycine, %	1.0	0.6*	1.0
Histidine, %	0.3	0.2*	0.4*
Isoleucine, %	0.6	0.5	0.84
Leucine, %	1.4	1.2	2.0*
Lysine, %	1.0	0.5	1.5
Methionine, %	0.45	0.28	0.25
Cystine or methionine, %	0.35	0.25	0.35
Total sulfur amino acids, %	0.80	0.53	0.87
Phenylalanine, %	0.7	0.5*	1.0*
Tyrosine or phenylalanine, %	0.7	0.5*	1.0*
Total PA + T, %	1.4	1.0*	2.0*
Threonine, %	0.6	0.4	0.84*
Tryptophan, %	0.2	0.15	0.26
Valine, %	0.8	0.6*	1.1*

*Figures based on analogy because of lack of information on requirement of this class of poultry for this nutrient.

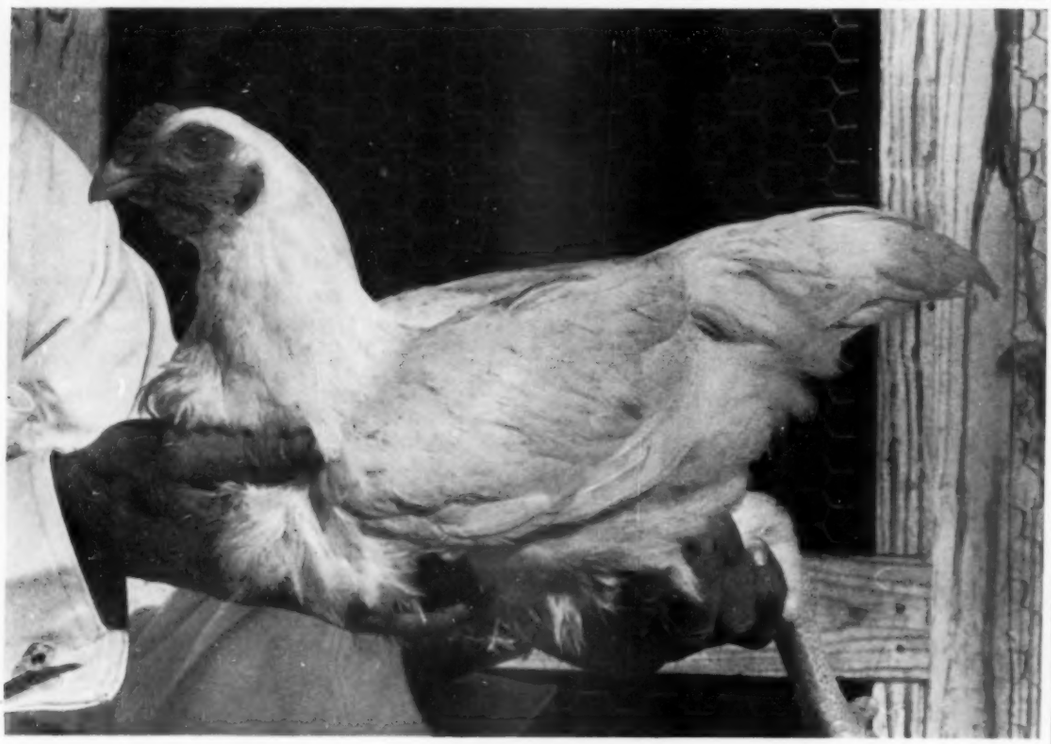
listed by the NRC for laying hens is not enough were confirmed at the 1961 Poultry Science meetings by two popers presented by Sullivan and Hurwitz and Griminger. Both found that 2.75% was needed by high producing hens, and Sullivan found some indication that shell thickness was improved by even higher levels. On the other hand Wilkinson reported at the same meeting that 3% of calcium was no better than 2.25 from the standpoint of production, feed efficiency or shell thickness.

"The available information seems to me to justify a figure of 2.75% of calcium. No doubt this figure will appear too conservative to some. At high environmental temperatures it may be desirable to feed more calcium, but it hardly seems justifiable to base a general recommendation on observations made at high temperature.

"The phosphorus recommendation for pullets 8 to 20 weeks old was reduced from 0.6 to 0.5% on the basis of the paper by O'Rourke et al., and the requirements of turkeys were reduced to 1.25% of calcium and 0.7% of phosphorus on the authority of reports by Sullivan, Waibel et al., and Nelson et al.

"The sodium level in Table 2 is equivalent to 0.37% of salt. Some commercial feeds contain only 0.25% of added salt. This may be enough if the feed also contains some fish meal or solubles, but is probably not enough in an otherwise saltless mash. Salt level is often reduced to solve the problem of wet litter. But a laxative condition does not mean that the salt level is too high—or even adequate. There are other laxative ingredients besides salt.

"A maximum value should also be specified for calcium, phosphorus and sodium. With the possible exception of calcium for laying and breeding turkeys, it would be desirable to avoid exceeding calcium, phosphorus, or sodium figures by more than 50%. This is intentionally a conservative recommendation. Excess minerals, even if harmless, act as diluents of energy and protein."



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ARTIFICIAL RUMEN

(Continued from page 28)

quirements of or by ruminant organisms.

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Dehy Plant Bought

BROOKS, ALBERTA—XL Feed & Supply, Ltd., Bassano and Brooks, Alberta, has purchased the two-drum alfalfa dehydrating plant formerly operated at Brooks by Buckerfields, Ltd., Vancouver.

This is the latest acquisition of the firm which has feed mills at Bassano and Brooks and also has two feedlots and several range leases in these areas. XL's managing director is J. L. McKinnon.

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NEW FACILITIES—This outside view of the Rapid City, S.D., plant of Tri-State Milling Co. shows the new bulk service center and remodeled retail store.

South Dakota Firm Invests $350,000 to Keep Abreast Of Feeding Changes in Area

To keep abreast of the changing patterns of livestock feeding in its area, Tri-State Milling Co., Rapid City, S.D., is investing $350,000 in expansion and modernization of its facilities in five South Dakota communities.

At Rapid City, the firm just recently held an open house to show area residents its new bulk feed service center and remodeled retail store. A complete new feed mill is being constructed at Belle Fourche. New facilities are being added at Sturgis, Presho and Watertown to serve western stockmen who are turning more and more to finishing their own cattle rather than selling to Corn Belt feeders.

Unique in the Watertown Tri-State expansion project is installation of a protein and mineral block machine, described as the first of its kind in the Midwest.

Carl A. Quarnberg, chairman of the board of the firm, says that the whole expansion program is aimed at improving and speeding service to both customers and grain suppliers.

The Rapid City program includes eight bulk feed storage tanks. From the aspect of speeding service, this facility allows trucks to park on a scale under the eight 25-ton bulk tanks and load out at the rate of a ton per minute. Packaged purchases go on top of the load from a loading dock serviced by a conveyor belt from the warehouse.

Grain delivery at the same plant moves along at a fast clip due to installation of a truck lift that will raise the front of the truck as high as 30 ft. in the air. Unloading time was cut from a half hour required for a large load of grain under the previous system to five or six minutes under the new system.

Steam Rollers

At Belle Fourche the same type of dump arrangement is being installed along with the new feed mill. Two steam rollers are also going in there.

A steam rolling mill is also going to be installed at Sturgis, the firm reported.

Still on the drawing board is a barley rolling facility at the Presho plant, it was stated.

All of the outlets are served by

BULK LOADING—Watching the first bulk loading at the new Tri-State Milling Co. facility in Rapid City, S.D., is plant superintendent LeRoy Johnson. The truck is parked on the drive-in scale and is under eight 25-ton bulk tanks.

OPEN HOUSE—This is an interior view of the retail feed and farm supply store during the grand opening held recently by Tri-State Milling Co. Store manager O. L. Grout is at the left.

SELLIN' SAM By Jim Zilverberg

"Say—that reminds me—I'm supposed to invite my wife's brother and his family to dinner!"

NEW DUMP SCALE—Shown here is the new 60 ft. truck dump scale and driveway at the Tri-State Milling Co. feed mill in Rapid City, S.D.

pelleting facilities of the Rapid City plant, Mr. Quarnberg added.

The protein and mineral block machine being installed at the Watertown plant will work on the extrusion principle rather than with a plunger, according to company spokesmen. They said this will make the blocks "more uniform in weight and dimension." Watertown's improvements will also include bulk handling and faster bagging of feeds. It is stated that where it formerly took two men to fill and sew 9 to 12 bags a minute, one man now handles 22 bags a minute.

Giving further evidence of the confidence Tri-State people have in the potential of their area is Bill Fetter, sales manager, who says the increased feeding of beef and lambs in the western range "is on the verge of breaking loose."

500 Visit Feed Mill During Grand Opening

CHERAW, COLO.—Grand opening of the Consumers Co-op Assn. feed mill here recently attracted some 500 co-op members and other farmers from Colorado.

The mill has capacity of 35-40 tons of bulk feed per hour, it was reported. First feed was produced at the mill in March. Construction includes a 50 by 96 ft. finished feed warehouse, a 50 by 60 ft. ingredient warehouse and a 32 by 60 ft. driveway, according to Ray Riggenbach, manager.

Provisions have been made at the new warehouse to install an additional pellet mill in the future. The plant now produces pelleted formula feed at 10-12 tons per hour and feed at 20 tons per hour.

Says Kentucky Will Soon Be Egg Exporter

LEXINGTON, KY.—Kentucky's governor, Bert Combs, predicted increasing emphasis in his state's egg production to a point where egg exports will exceed imports, during a speech before the Kentucky Farm Bureau convention here recently.

The governor credited the 1960 Kentucky egg marketing law with increasing out-of-state demand for Kentucky eggs. "Kentucky, long an importer of eggs, is about to become an exporter," he said.

NEBRASKA OFFICERS — Nebraska Poultry Improvement Assn. officers, elected at the annual convention in Lincoln, are pictured here. President is Lloyd Parr, Sure Hatchery, Broken Arrow, left, front row. Center front is Melvin Brown, Colonial Poultry Farms, Lexington, 1st vice president; and Alvin Boettcher, Fairbury Hatchery, Fairbury, 2nd vice president. Second row, left to right, are: Mell Renard, White Feather Hatchery, Lexington, treasurer; Dorle Hays, Hays Hatchery, Cozad, executive committeeman; Donald Clabaugh, Columbus Hatchery, Columbus, executive committeeman, and Doyle H. Free, executive secretary of the organization. Not pictured are: Leonard Ford, Ford Hatchery, Tecumseh, director at large, and Roy Brown, Gaydou-Brown Hatchery, Blair, American Poultry & Hatchery Federation director.

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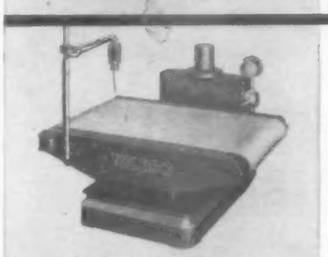

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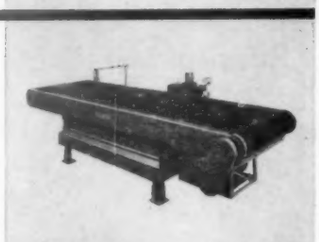

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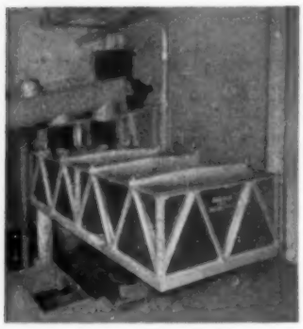

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ABSTRACTS

(Continued from page 36)

larly; they reached 41.6 p.p.m. at the beginning of pregnancy, but were only 25 p.p.m. at the time of parturition. Yet it is noteworthy that the hemoglobin levels of the ewes remained throughout pregnancy within normal limits. In the new-born lambs, the iron content of the livers was much higher than that of their mothers, namely 185.2 p.p.m.

◆

Tastes Pigs Prefer

In a series of experiments undertaken by Dr. A. K. Halama, an Austrian researcher, to induce baby pigs from the first day of life to eat vitamins, antibiotics, minerals and trace elements mixed with soil, it was determined that the addition of cane sugar or saccharin had no effect on the taste of the pig. However, the addition of 5% of glucose or 2% of meat extract had a stimulating effect and greatly improved the acceptability of the feed supplements which were mixed with the soil (Wtm. 766).

◆

Too Much Grain?

Overload of the rumen following ingestion of grains causes its bacterial flora to change rapidly until it consists largely of lactic acid producing species. A certain amount of this acid passes into the blood stream causing acidosis. It is believed that some other toxic material may also be responsible for this condition, according to Dr. G. Rivard (Cjvs. 227).

◆

Antibiotics in Feed

In a report by the Norwegian researcher, Prof. J. Höie (Wtm. 764), it is said that over a period of seven years more than 12,000 birds of an Italian chicken breed were given the following amounts of antibiotics per kilogram (1 kg.=2.2 lb.) of balanced feedstuffs: Penicillin, 5-10 mg.; oxytetracycline (Terramycin), 10-15 mg.; chlortetracycline (Aureomycin), 10-15 mg.; oleandomycin, 2 mg., or zinc bacitracin, 10 mg.

No statistically significant difference could be found for the effect of the various antibiotics on the feedstuffs, whether they were of pure vegetable origin or contained additional 5-10% of animal protein. There was also no influence to be noticed on weight gains or the breeding performance of the hens, nor was there a difference in the health conditions of the birds which received antibiotic-free and antibiotic-enriched feedstuffs.

◆

Hardware Disease

Foreign objects ingested by cattle, if not removed from the gastrointestinal tract by probangs, are often the cause of such dangerous conditions as pericarditis (inflammation of the heart sac). The Russian veterinarian, S. G. Meliksetjan (Luf. 481), found that 80% of the cows treated had foreign objects in the rumen, many of them of metallic nature. He suggests putting round magnets in the feed bins and troughs to collect metal pieces which can easily be removed before they are ingested.

◆

Trace Elements

A. B. Novokrestshenov published the following figures after finishing his investigational work in which he used swine of 6 to 9 months of age (Luf. 470). The control group consisted of healthy animals having an average weight of 68 kg. (approximately 150 lb.). In the test group, there were slow-growing animals whose average weight as only 65.7 kg. (approximately 144½ lb.). All animals received the same feed, but for one month the test group's ration was fortified by cobalt chloride ($CoCl_2$) and manganese chloride ($MnCl_2$).

This resulted in a complete change in appetite and growth as well as appearance of the test animals; the daily average weight gain jumped to 759 gm. (approximately 1 lb., 11 oz.), against only 567 gm. (approximately 1 lb., 4 oz.), for the controls.

The amounts of trace minerals used during the month-long experiment were 30 mg. of $CoCl_2$ and 45 mg. of $MnCl_2$ per 100 kg. (220 lb.) of body weight.

25c Dividend Declared

GREAT FALLS, MONT.—A dividend of 25¢ per share on outstanding common stock, payable Dec. 10, 1961, to stockholders of record Dec. 1 was declared at the regular quarterly meeting of the board of directors of Montana Flour Mills Co. The meeting was held in the general offices of the company at Great Falls.

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Southeast Convention to Provide Close Look at Poultry Industry Problems, Possible Solutions

DECATUR, GA. — The Southeastern Poultry & Egg Assn. convention, scheduled to make its first major change since it was founded 14 years ago, is taking on a streamlined "new look," association officials report.

The convention, largest annual poultry gathering in the world, will be held Jan. 29-31 in Atlanta's new Merchandise Mart, a building specifically designed for conventions and product showings.

Operating under the theme "Stop, Look and Listen—the business you save may be your own," the 1962 convention will be directly related to the problems faced by the poultry industry, and to a search for solutions.

"We are attempting to keep the program vital and to give information in the management areas which will most affect members of the industry during 1962," according to Norman Sanders, Columbia, S.C., president of Southeastern.

"Some of the nation's top speakers, and a group with some of the best management knowledge, are scheduled for the program," stated A. A. Middleton, Dothan, Ala., chairman of the program committee.

Keynote speaker will be Dr. Herb True, nationally known author, lecturer and research psychologist.

Bob Martin, executive secretary of the Southeastern association, has reported that advance registration at Atlanta hotels exceeds any previous year, and that booth space is sold out even though the Merchandise Mart has a "great deal" more space than the City Auditorium.

The annual banquet will be held on Monday night, Jan. 29, at the Dinkler Plaza Hotel. The Dinkler will be headquarters hotel for the 1962 convention.

Major convention talks, in addition to that by Dr. True, include: "Management Ideas," Don H. Scott, Don Scott Associates, New Canaan, Conn., author of "Ten Greatest Mistakes Management Makes"; "Diagnosing the Case," Dr. Ken Laurent, general manager, Marbut Milling Co., Augusta, Ga.; "Industry Long-Range Trends of Major Significance," Dr. William R. Henry, agricultural economist, North Carolina State College; "Self-Help Stabilization Program with the Use of Marketing Agreements and Orders," Dr. James Ralph, assistant secretary of agriculture; "Have Government Controls Helped Agriculture?" Charles B. Shuman, president, American Farm Bureau Federation.

The subject of government controls also will come up in the special commercial egg program. Dr. William E. McDaniel, agricultural economist, University of Delaware, will tell "How Marketing Orders on Broilers Could Affect Commercial Eggs and Other Segments of the Poultry Industry."

There also will be a special turkey program. It will include these presentations: "Latest on Turkey Marketing Orders," M. C. Small, secretary, National Turkey Federation; "How Can the Southeast Offset the Feed Cost Advantage of the Midwest in Turkey Production," R. C. Scherich, southeast turkey manager, General Mills; "Processing and Marketing New Turkey Products in the Southeast," Ed A. Manning, Sumter (S.C.) Frozen Foods, Inc.

FORTIFY YOUR FEEDS WITH DIAMOND V BRAND YEAST CULTURE

The Potent, Economical Source of 5 Most Important Feed Values
1. Enzymes • 2. Unidentified Factors • 3. B Vitamins including B_{12}
4. Increased Palatability and Appetite Appeal • 5. Other Important Elements
FOR ALL CATTLE, HOGS, SHEEP, CHICKENS, TURKEYS
Yeast Culture Values Proven by State College Tests
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Processors of DRIED FISH SOLUBLE PRODUCTS
A "MUST" IN EVERY SWINE OR POULTRY RATION
Call or write for complete information and price
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These birds are telling something about minerals
YOU SHOULD KNOW

No on-farm chickens will ever enjoy their diets! The feed for most of these birds contains abnormal amounts of one of the trace elements. In this and other similar experiments the effects of several different levels of an element are compared. In one test we subjected a group of young birds to a feed containing 1,125 times as much iron as is normally added to a feed! These trials at the Lime Crest Research Laboratory tell us about the tolerance of chickens for the trace elements in Lime Crest Trace Mineral Pre-Mixes. They also tell us about their tolerance for the various compounds of these elements. Our iron experiment, for example, demonstrated conclusively that in a formula feed ferrous carbonate is preferable to either ferrous gluconate or ferrous sulphate. Careful research like this assures you that the compounds in Lime Crest Trace Mineral Pre-Mixes are not only effective sources of the mineral elements but completely safe at levels 100 times as great as the levels recommended for your finished feeds. You can also be sure of Lime Crest performance in your mill . . . because of a special process, exclusive with Lime Crest, our Trace Mineral Pre-Mixes are guaranteed to flow freely and never cake. It costs so little per ton to add the advantages of Lime Crest Pre-Mixes to your feeds, why not look into it today. Write for our new illustrated folder and price list.

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TRACE MINERALS
LIMESTONE PRODUCTS CORPORATION OF AMERICA, NEWTON, NEW JERSEY
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Enzymes that work are here now!
NOPGRO®
WORKS
See page 15

Use FEEDSTUFFS Want Ads for RESULTS

SHIPPING FEVER COSTLY? IT NEEDN'T BE!

And it isn't — to far-sighted feeders who cut stress effects by giving all newly-arrived cattle special feeds containing high levels of Aureomycin

Stress feeding with high levels of AUREOMYCIN® for all newly-arrived cattle—that's the protective, money-making measure more and more farm feeders and commercial feed-lot operators are taking.

First few weeks critical period

Those first two or three weeks following the arrival of cattle are critical. Shipping leads to stress. Unloading and sorting add new stress. Changes in surroundings or in weather — new feeds and feeding methods — add still more stress.

Stress often brings on shipping fever, bacterial diarrhea, foot rot, secondary bacterial infections, sub-clinical or invisible diseases.

Build barrier against losses

Stress feeds with AUREOMYCIN help minimize losses from these diseases. Such feeds provide 350 milligrams of AUREOMYCIN per head per day — *and are fed until the critical period is past.* No antibiotic, chemobiotic, drug or hormone equals AUREOMYCIN in its activity against disease. Cattle getting stress levels of AUREOMYCIN *every* day come through the critical period strong and vigorous—go on full feed quickly. After the critical period, cattle can be continued all the way to market on feeds that provide 70 milligrams of AUREOMYCIN per head per day. This will keep them healthy and making profitable gains.

Aureomycin prevents shipping fever

In the table shown below, you can see the effectiveness of AUREOMYCIN in controlling respiratory diseases in cattle. In this experiment AUREOMYCIN was fed at the rate of 350 milligrams per head daily for 7 days, followed by feeding 70 milligrams per head for the remainder of the experiment. Note the high reduction (59%) in the number requiring treatment in the group fed AUREOMYCIN. This lot produced over 7,000 extra pounds of beef!

Ask for stress feeds containing Aureomycin

Your feed dealer can supply you with a specially-formulated stress feed containing AUREOMYCIN. Ask him for it. Ask him also for a new booklet, "How to Build Bigger Beef Profits." If he doesn't have a copy, write direct to American Cyanamid Company, Agricultural Division, Princeton, N. J. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

Effect of feeding AUREOMYCIN on control of respiratory disease in feeder cattle
(125-day trial in Colorado)

	Without AUREOMYCIN	With AUREOMYCIN	Difference
DISEASE CONTROL			
Initial no. animals	293	293	
No. requiring treatment	111	45	–59%
No. requiring re-treatment	28	11	
No. re-treatments	44	15	
No. deaths	2	1	
No. livers condemned	84	15	–82%

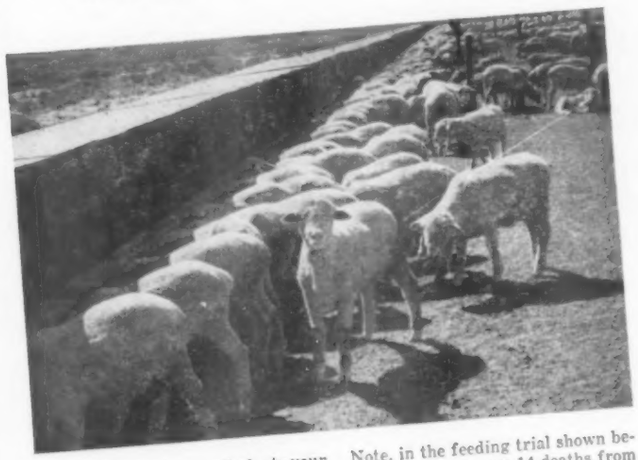
The label instructions on Cyanamid products, and on products containing Cyanamid ingredients, are the result of years of research and have been accepted by Federal and/or State Governments. Always read the labels and carefully follow their directions for use.

CYANAMID
AUREOMYCIN
IN FORMULA FEEDS

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

ENTEROTOXEMIA COSTLY? IT NEEDN'T BE!

And it isn't — to profit-minded lamb feeders who prevent over-eating disease, keep lambs gaining fast, with feedlot rations containing Aureomycin



It *could* happen in your flock—to your biggest and thriftiest lambs. One night, they're in the pink of condition. Next morning, they're gone, suddenly struck down.

That's enterotoxemia, or over-eating disease — hitting so fast and so fatally you can't do anything about it.

The time to *do something* is *before* enterotoxemia has a chance to strike. Take the preventive measures that keep this disease from being a constant threat to your yearly lamb profits.

One of the best of these measures is continuous feeding of a formula feed that contains AUREOMYCIN.® The extraordinary effectiveness of AUREOMYCIN in stopping losses from enterotoxemia has been demonstrated repeatedly in feeding trials with feedlot lambs.

Note, in the feeding trial shown below, that there were 14 deaths from enterotoxemia in a group of feeder lambs *not* fed AUREOMYCIN — no deaths in a group which were on rations containing AUREOMYCIN.

One of the reasons for the effectiveness of AUREOMYCIN is this: *AUREOMYCIN is absorbed from the intestinal tract into the bloodstream and into the body tissues. There it fights and holds back the bacteria causing enterotoxemia.*

Ask your feed manufacturer or feed dealer for lamb feeds containing AUREOMYCIN. Stop losses due to enterotoxemia. Get low-cost gains all the way — and extra returns at market. American Cyanamid Company, Agricultural Division, Princeton, N. J. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

Value of AUREOMYCIN in reducing losses from enterotoxemia and promoting low-cost gains in fattening lambs

	Without AUREOMYCIN	With AUREOMYCIN 20 gm/ton
No. of lambs	199	200
Av. initial wt. (lb.)	51	62
Av. final wt. (lb.)	91	95
No. deaths	14	0
Av. daily gain (lb.)	0.60	0.66
Feed per lb. gain (lb.)	9.1	8.44

Cyanamid Exp.

The label instructions on Cyanamid products, and on products containing Cyanamid ingredients, are the result of years of research and have been accepted by Federal and/or State Governments. Always read the labels and carefully follow directions for use.

CYANAMID
AUREOMYCIN
IN FORMULA FEEDS

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

CYANAMID HELPS YOU PROBE DEEPER INTO AN EXPANDING MARKET

That's the market for special feeds to counteract stress and disease in feeder beef and lambs. Cyanamid advertising, promoting these feeds, is now appearing in all the principal feeding areas.

How much *more* volume can manufacturers get on special supplements for feeder cattle and lambs?

"Plenty!" say most authorities. Though the demand for these feeds has grown, and is still increasing yearly, the big market remains largely untapped.

More education—more facts—on the dollar-return value of these feeds is needed. Cyanamid supplies these facts, and helps you probe deeper into the market, with advertisements aimed directly at the areas where most cattle and lambs are fed.

These advertisements feature the two diseases most costly to cattle and lamb feeders—tell what your supplements containing AUREOMYCIN® can do to offset these diseases, keep animals healthy and gaining.

In addition to this farm paper advertising, 11 Radio Farm Directors on stations in the feeder areas will be telling your customers — in 35 announcements per week — about the benefits of feeds containing AUREOMYCIN for feeder cattle and lambs.

If you are now making supplements containing AUREOMYCIN for cattle and lambs you will want to tie your promotions in with these advertisements. If you are not making such feeds, why not plan to do so and get in on the expanding market? See your Cyanamid representative who will be glad to work with you. American Cyanamid Company, Agricultural Division, Princeton, N. J. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

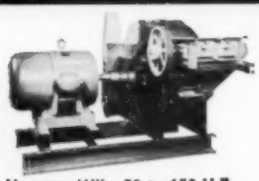
1,632,000 readers
see and read
these advertisements
in these farm magazines

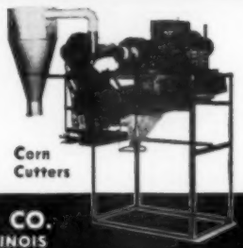
WALLACE'S FARMER
PRAIRIE FARMER
CALIFORNIA FARMER
NEBRASKA FARMER
THE FARMER
WISCONSIN AGRICULTURIST

CYANAMID
AUREOMYCIN
IN FORMULA FEEDS

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

BIG CHIEF
Pit Augers • Elevator Legs • Mixers • Scalpers •
Graders • Earcorn Crushers • Steel Bins


Hammer Mills 30 to 150 H.P.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CUSTOM MILLERS SUPPLY CO.
BOX 383 MONMOUTH, ILLINOIS
MANUFACTURERS OF QUALITY MILLING EQUIPMENT SINCE 1930

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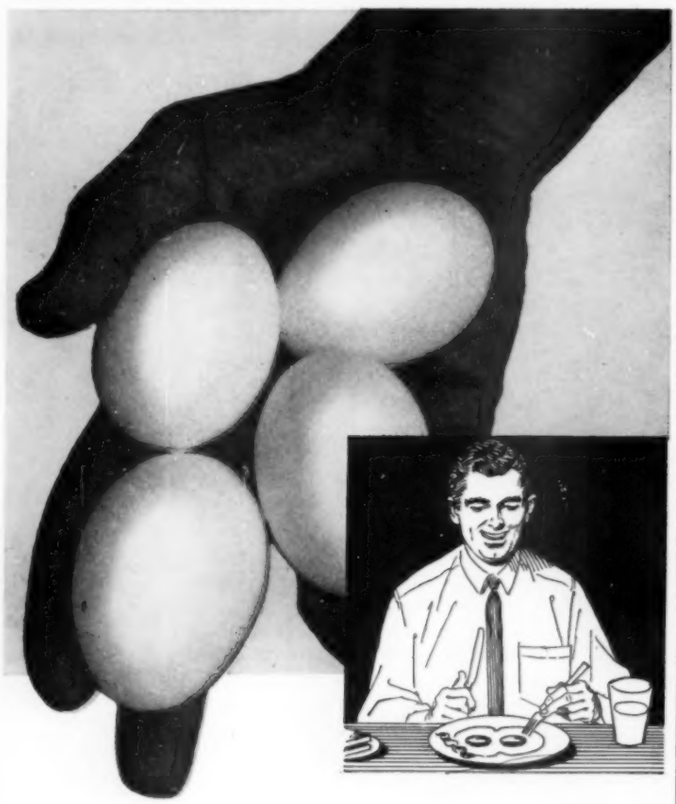

LAID BY A QUEEN...
FIT FOR A KING!

For appearance, and the finest **quality**, both inside and out, **nothing** beats a fresh egg from an Arbor Acres Queen.

If **you** haven't tried this efficient, quality-producing layer, talk to your near-by Arbor Acres Man and plan a flock. You'll be glad you did.

BREEDING BETTER BIRDS FOR BETTER BUSINESS

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GLASTONBURY, CONN.

distribution centers:
Skowhegan, Me. • Albertville, Ala. • San Luis Obispo, Cal.
Dahlonega, Ga. • Springdale, Ark. • Blairsville, Ga.
Carthage, Miss. • Thorntown, Ind. • Tenaha, Tex. • Concord, N.C.

BANKER SERVES BARBECUED BROILER—Various phases of broiler operations of Farmers Elevator, Mason City, Iowa, are brought together for a big broiler barbecue day. The banker who handles financing for the growers serves the barbecued broilers. Owner of the feed dealership, Marion Clayberg, stands directly behind the bank representative.

Iowa Dealer Sells Feed for 500,000 Broilers a Year

By Al P. Nelson
Feedstuffs Special Writer

Broiler production is moving into the Northland.

This has been evidenced in a number of instances in recent years, and feed men are backing such broiler production in some cases. With modern housing, ventilation, proper heating and good management, broiler operations can thrive—when market prices are right—in climates which are colder and wetter than the South.

An example in point is the broiler production program of the Farmers Elevator Co., Mason City, Iowa, owned by Marion Clayberg, a former farmer, high school athletic coach and PCA secretary-treasurer. Back in 1950 Mr. Clayberg started in the broiler business by establishing breeder flocks and supplying hatchery eggs for Southern broiler operations.

The next step was to promote broiler production in the Mason City trade area. Mr. Clayberg's dealership has been furnishing feed for about 500,000 broilers annually.

Of those half million broilers, Mr. Clayberg and his son raise about 290,000 and eight other broiler growers raise the remaining 210,000 on a contract basis. About four and one half batches per year are required to make this total.

Mr. Clayberg has been in the broiler business for over 10 years.

In his contracts with broiler growers he pays a $300 bonus for having a 10,000 broiler house. He also pays a bonus for feed efficiency and its relation to market prices. When there is a loss on the broiler operation, Mr. Clayberg stands the loss. The current cost of raising broilers in the Mason City region is about 13¢ lb., said Mr. Clayberg at the time this article was written, earlier this year.

The company's report for all of 1960 shows that there was a labor profit of $57.60 per 1,000 birds on a 476,374 bird production on a 96.5% livability. The pounds of feed per pound of meat amounted to 2.42. The efficiency ratio was 1.57. The cost of raising broilers in 1960 in the operation was 14.75¢, but the selling price ranged from 14 to 19¢ lb.

On the sale of 476,374 birds sold in 1960, receipts amounted to $296,-321.97, and the costs were $267,877.91, leaving a total labor profit of $28,-444.06.

"Naturally in 1961, with prices down, all of us have been studying costs carefully and shaving them here

TALKING BROILERS—Marion Clayberg, right, of the firm, talks with one of the broiler growers.

FARMERS ELEVATOR—Facilities of Farmers Elevator, Mason City, Iowa, are shown here. The firm has a small custom mill here and also operates a Daffin mobile mill.

Get the facts on worming. Ask your feed man these 6 questions:

"Hygromycin hits harder than other drugs. The new drug gets whipworms, which no other drug has been able to touch. It acts partly by blocking production of the parasites . . . an ideal way to stop the worms before they do the damage."

PRESS RELEASE
UNIVERSITY OF WISCONSIN
DECEMBER 16, 1957

1. Is it true that Hygromix in the feed kills more kinds of worms than any other product on the market?
2. Is Hygromix the only worm control method that kills worms before they do much of their damage?
3. Is Hygromix the only product that prevents worms from laying millions of new eggs?
4. Is Hygromix feed the only way to give my hogs continuous, full-time protection?
5. Is it true that Hygromix does not upset feeding or require any extra work?
6. Does Hygromix really cost about the same as a purge-type wormer?

P.S. After your feed man answers "yes" to these six questions, *you* answer "yes" when he asks you if you want Hygromix in your next feed order. It's the best worm protection you can buy!

HYGROMIX®
(S. hygroscopicus fermentation products*)*
ELANCO

Makers of Stilbosol® (diethylstilbestrol premix) • Streptomycin Sulfate • Vitamin B12 • Micro-Pen® (special coated procaine penicillin G)
ELANCO PRODUCTS COMPANY • A DIVISION OF ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA

DISCUSSION BUILDER—This bulletin board in the office of Farmers Elevator, Mason City, Iowa, proves to be a discussion builder. It features photos of broiler and other feeding operations.

LANDERS' REVOLUTIONARY NEW EXPANSION CLAMP AVE YOU MONEY!

NEW 3-PIECE EXPANSION RELIEF CLAMP

- OFFERS BETTER DIE SUPPORT
- GIVES LONGER LIFE FOR CLAMP
- ELIMINATES STUDS
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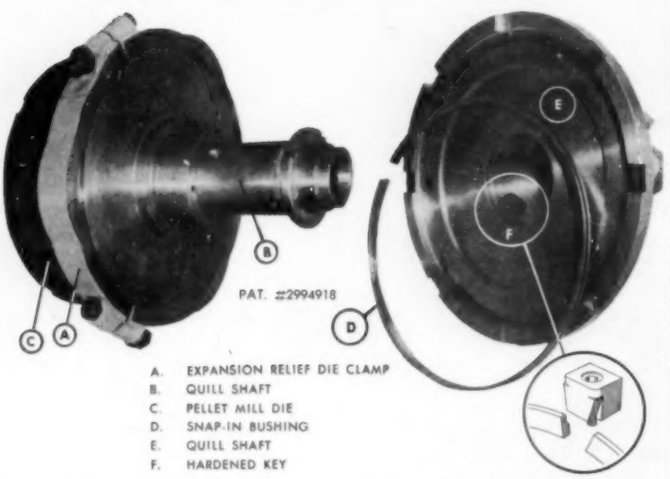

Landers' new 3-piece heavy expansion relief die clamp (No. LM-221-3-EXP), gives better die support and increases life of clamp. The new 3-piece expansion relief die clamp eliminates using studs which will break off and cause costly downtime.

The new 3-piece die clamp is shown above with Landers' quill (LM 210-RB) with replaceable Snap-In Keylock bushing. The bushing absorbs the wear, helps maintain tight die fit at all times, and eliminates flex of the die which eventually causes die breakage and housing wear. By eliminating the driving rim, you eliminate troublesome corroded cap screws, broken cap screws and downtime . . . you save 75% of pellet mill die assembly maintenance cost.

Landers' new 3-piece heavy expansion relief die clamp can be used with a driving rim which has been machined to a 45° angle for more clamping surface.

Convert your present 75 to 125 HP pellet mills to Landers' new 3-piece heavy expansion relief clamp by ordering 45° driving rims from stock.

Write today for complete information

LANDERS • 207 EAST BROADWAY • FORT WORTH, TEXAS

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FIRM_____

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CITY_____ STATE_____

TYPE OF PELLET MILL USED_____

LANDERS MILL MANUFACTURING COMPANY

LANDERS MACHINE COMPANY

207 EAST BROADWAY
FORT WORTH, TEXAS

and there as a result," said Mr. Clayberg. "We are down to 13¢ and hope to get below it a little by the end of the year."

Broiler Barbecue

Mr. Clayberg holds a big broiler barbecue for all his broiler growers, employees, bankers, etc., once a year. This is a widely-publicized affair. The feed man and his staff, with the aid of the Purina staff, have large signs on display at the barbecue, showing the profits of unidentified broiler grower customers. The sign story one year said, "What Our Broiler Growers Have Done: Over 1,000,000 Flavor Fed Fryers Sold Since July, 1956! For 10.89¢ Average Profit per Bird."

This barbecue, with its large attendance, good-fellowship, selling signs and general enthusiasm, does much to whip up interest in broiler growing in the area, reports Mr. Clayberg.

After broilers are raised, they must be marketed. Mr. Clayberg a number of years ago associated himself with some other broiler-minded people and formed a corporation called Fryer Farms. The company included Mr. Clayberg, a farmer, a hatcheryman and another Purina dealer. Eventually this corporation built a broiler processing plant at Manly, Iowa. Later, as production grew this plant was moved to Mason City, and two years ago to Forest City, Iowa, 40 miles northwest of Mason City.

"This plant is an essential part of the broiler program," states Mr. Clayberg. "We can process our broilers and sell them to good markets. The tie-up between broiler growing and processing is such, too, that it steadily encourages more farmers to raise broilers."

He reports that the processing plant is now dressing about 40,000 birds per week, and expectations are to get up to 120,000 birds in the future. This year the plant also started processing hens.

"Our processing plant, which is a separate corporation, of course, sells 70% of its production in Minnesota," says the Purina dealer, "and with promotion this market should increase."

Finance Plans

The financing of feed for broiler growers is done through several plans. Purina will finance the feeds through to market; the hatchery finances the chicks, and the processing check comes to Mr. Clayberg, who in turn pays the participators. For growers who need broiler houses, these can be secured through a local lumber dealer, with a finance plan available through local banks. Equipment, too, can be financed.

"When a man wishes to enter the broiler raising business we can help guide him to the right sources where he can get good advice and financing on houses, equipment, etc.," Mr. Clayberg says. "Broiler growers rely on a feed man to help them in securing this information."

Mr. Clayberg says that an attraction for some farmers considering the raising of broilers is that broilers can supplement farm income without the acquisition of a large amount of additional land. Mason City area farmers, in some instances, he says, have made more money from one broiler house than they have from 80 acres of rich Iowa soil."

Breeder Flocks

The hatchery supplying the chicks for the broiler operations in the Fryer Farms program has 16 breeder flocks, totaling 16,000 hens supplying eggs. The hatchery can set 96,000 eggs at a time. The hatchery's chicks have averaged a livability of 97.1%.

To handle the grind and mix volume for the sale of poultry, hog and cattle feeds, the firm has a 75 h.p. hammermill and two 1½-ton vertical mixers. In addition there also is a Daffin mobile mill which helps to serve a larger area on grinding and mixing. Having both a stationary and a mobile mill gives the firm an opportunity to serve numerous customers regularly, he says.

POULTRY SERVICE—William Clayberg, son of the owner of Farmers Elevator, is shown here on a poultry service call.

William Clayberg, son of the owner, is very active in the feed business. He visits broiler growers regularly and helps them with poultry problems. Farmers Elevator Co. also has another outside man, Glen Harmon, who specializes in livestock.

"With a constant effort to keep costs down, and with more promotion of steady broiler markets in this area, we feel that the broiler business is going to continue to be profitable in the long run," says Mr. Clayberg. "Price conditions have straightened out before and they'll do it again. The quality of our product, plus big markets close to home should be an important factor in our favor."

No Violation Ruled On Molasses from Cuba

WASHINGTON — Imports of Cuban molasses, which prompted criticism earlier this year, did not violate the U.S. anti-dumping laws, the Treasury Department has ruled.

The decision means two shipments of Cuban molasses, valued at $1.7 million, received earlier this year, won't be subject to a special import duty designed to cancel any cut-rate sale price, the Wall Street Journal reported.

The treasury was quoted as saying the price at which the molasses was purchased was comparable to the prevailing price in Cuba. This is the legal yardstick for determining whether a product is being imported into the U.S. at prices below fair value.

A shipment to one company, Publicker Industries, Inc., set off a series of White House moves to halt further scheduled purchases by the company. The U.S. Department of Agriculture eventually agreed to sell the company surplus grain to use in place of Cuban molasses.

While the two 1961 shipments were not found to violate the anti-dumping law, the treasury warned its customs officials to be on the lookout for future shipments of Cuban molasses.

Committee to Study USDA Operations

SACRAMENTO, CAL. — "The National Grain Trade Council has named a committee to gather factual and documented information on the operations of the U.S. Department of Agriculture as these operations interfere with or pre-empt feed grain marketing by the usual and customary channels of trade," the California Hay, Grain & Feed Dealers Assn. bulletin to members reported.

The purpose of the committee is said to be "to make known to the general public and to educate the political representatives of the creeping socialism imposed on the grain industry by the USDA," the bulletin stated.

NEW MILL

(Continued from page 19)

in a gutter which runs down the center of the floor lengthwise.

Rail Facilities

On the other side of the new mill, opposite the truck receiving area, is where rail cars are unloaded. Since most ingredients and all grain are received by truck, the traffic on the rail side is light. Some soybean meal and crimped oats are shipped by rail in sacks and are unloaded from the cars through large doors into a sack warehouse area at the front of the mill. Bulk ingredients received by rail are unloaded by air.

Before mixing, grains and other ingredients requiring grinding are processed through a 75 h.p. Jacobson hammermill which has a separate motor driving the blower. This hammermill is fed milo, corn, oats and alfalfa pellets from four "grinder" bins which are grouped with 22 other overhead ingredient bins.

The mill obtains some of its grain from crops produced on Sugarland Industries' land and some from farmers in the surrounding area. Alfalfa pellets come from the company's nearby dehydrating plant. Mr. Briscoe explained that the alfalfa pellets are reground at the feed mill because receiving this ingredient in pellet rather than meal form reduces handling problems.

Dehy Plant

Production capacity of the single-drum dehy plant is about 1½ tons of pellets per hour.

The dehy plant is equipped with a 125 h.p. hammermill (Jacobson) and a 50 h.p. pellet mill (California). Bulk dehy is stored in two 300-ton bolted steel tanks and sacked dehy is stored in a warehouse which adjoins the plant.

Although the plant was built for alfalfa dehydration, a large volume of Bermuda and Johnson grass is processed and pelleted. This is particularly the case when alfalfa stands are hurt by too much rain.

Sugarland Industries does some custom dehydrating for feeders in the area.

Mr. Schrum is very familiar with the alfalfa dehydrating industry. He served as president of the American Dehydrators Assn. in 1960.

Ingredient Bins

Fourteen of the feed mill's overhead ingredient bins are over the plant's scale and hopper (Fairbanks-Morse) which feeds into a 3-ton horizontal mixer (Hayes & Stolz). Six of these 14 bins are 2,200 cu. ft. in size, four are 1,100 cu. ft. and four are 550 cu. ft. Nearly half of the bins over the hopper have live bottoms and are equipped with vibrators.

Eight overhead bins are used for supplying the 100 h.p. California pellet mill, for sacking-off and for bulk load-out.

Bulk feeds travel from selected overhead bins via a horizontal conveyor to a load-out spout in the shed where the trucked ingredients are received.

Three Molasses Mixers

Sugarland Industries' new mill is unique in that it has three molasses mixers. One of these, moved to the new plant from the company's old mill, is used for adding molasses to bulky feeds, those with more than 25% roughage in the form of peanut or cottonseed hulls. These bulky feeds are sacked directly from the molasses mixer.

Another molasses mixer (Hayes & Stolz) is just above a Richardson automatic sacking scale. Feed which goes through this mixer is either sacked or diverted by screw conveyor for bulk load-out. The plant has two Richardson sacking machines.

The plant's third molasses mixer is operated in conjunction with the 100 h.p. pellet mill, which is equipped with a horizontal cooler. Steam for the pellet mill is generated in a Sellers boiler. The boiler room is actually a separate building a short distance from the mill. An insurance company specified that the boiler could not be installed in the feed mill. Steam is piped from the boiler building into the feed mill to the pellet mill and steam which has been condensed into water again is returned to the boiler.

Molasses for the mill's three molasses mixers is stored in two tanks. The largest of these tanks—12,000 gal.—is outside near the rail siding. This tank is large enough to receive an entire tank car load. Molasses is automatically fed from this outside tank into a smaller (500 gal.) heated tank inside the mill and then on to the mixers.

Some of the conveying equipment which connects storage bins can be operated from remote stations some distance from the dust-protected control room. But these remote switches are installed so that when they are being operated individually at the outlying stations they can't be turned on from the control room by mistake.

Liquid Egg Production Highest in 17 Years

WASHINGTON — Production of 31,197,000 lb. of liquid egg and liquid egg products (ingredients added) during October was the largest for the month since 1944, according to U.S. Department of Agriculture.

This total compares with 19,948,000 lb. in October, 1960, and the average of 14,533,000 lb. The quantities produced for immediate consumption and freezing were larger than in October last year, but the quantity produced for drying was less.

Airlift Chicks to Cuba

TORONTO—Well over a million day-old chicks have been flown from Toronto to Cuba during recent months, according to an article in the Toronto Telegraph. It's all part of a deal made by the Castro regime with Canadian breeders, air charter companies and others in Ontario.

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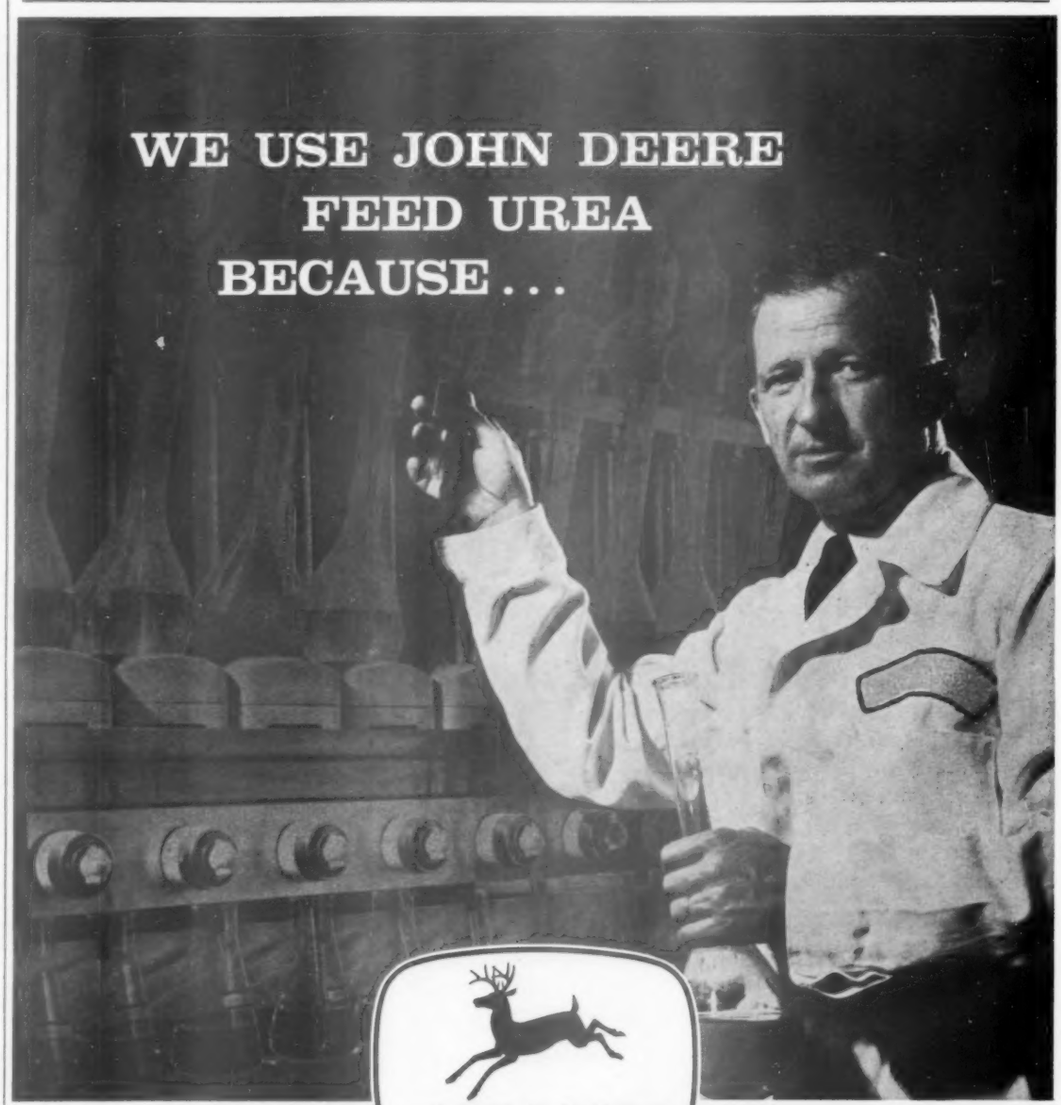

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So wrote a professor of animal science at a large midwestern university in response to a letter from a Jamaican feed manufacturer asking which magazine would be most helpful in his business.

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FEED CONTROL COMMENT

By BRUCE POUNDSTONE

Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

Antibiotic Guarantees

At the 1960 Association of American Feed Control Officials meeting in Washington, use of the term "antibiotic feed supplement" was abandoned in favor of listing each antibiotic used. This practice has been followed for the past year and has met with favorable acceptance.

The method of expression of antibiotic guarantees remains a problem. The Medicated Feed Labeling Committee, at its meeting in Chicago in May, 1961, and in its report to the Washington meeting in October, commented that while the initial requirement was that antibiotics be guaranteed in terms of grams per pound of feed, it was soon found that grams per ton was a more convenient expression for feeds which contained low levels. In such cases the expression grams per ton was permitted as additional information on the label.

Use of duplicate statements becomes cumbersome even though each of the two terms has individual merit and usefulness. The committee, therefore, suggested the policy of expressing antibiotics as "grams per pound" in all products which are to be diluted before feeding and as "grams per ton" in all products which are to be fed without further mixing with feeds.

Even though the above would permit a single guarantee, some feed manufacturers feel that listing only one guarantee could possibly result in confusion on the part of the feeder. It is the contention that the feeder is most familiar with "grams per ton" and may misread "grams per pound." This might be particularly true if the user used both complete and concentrate type of feeds.

I doubt if any state will object to the use of both guarantees on the same label. The suggestion of the committee still stands, however, as a proposal. Dr. Quackenbush comments that he does not expect state officials would insist on reprinting of tags which are already prepared on the old basis, but that in new printings they would hope that the new basis will be tried out.

Perhaps we should look upon this as a transition period during which grams per pound and grams per ton would both be shown. Standardization would later be possible.

The report of the Medicated Feed Labeling Committee appears on page 70 of the 1962 official publication of the Association of American Feed Control Officials. This report also has a suggestion concerning guarantees of milligrams per pound. The committee feels that "milligrams per pound" should be used only in those cases where a dosage is given as "milligrams per day" in feeding directions. This is to make it easier for the purchaser to relate these directions to feeding operations.

BHA and BHT

Several have asked as to the possibility of using BHA and BHT as common or usual names. This would mean dropping the parenthetical statement that appears in definition 30 in the 1961 publication of the AAFCO. The 1962 publication, on page 36, still carries the same nomenclature.

The Food and Drug Administration has not as of this date given approval to use the shortened name only. At the time of this writing, there is no formal proposal before FDA to go to the shortened name, although it has been discussed.

It is doubtful if anything will be done in time to make any change on tags for 1962. Some companies have already made registration requests to use only these terms but have been told the correct designation is BHA (butylated hydroxyanisole) and BHT (butylated hydroxy toluene). Listings on tags should therefore be: BHA (butylated hydroxyanisole), a preservative, and BHT (butylated hydroxy toluene), a preservative, in accordance with the note under "Chemical Preservatives" on page 36 of the 1962 official publication of the Association of American Feed Control Officials.

The time has arrived when we should drop these parenthetical expressions. One way to proceed is to file a Food Additive Petition with FDA asking that BHA and BHT become the common or usual name. One feature of this is that in declaring the abbreviated terms as the correct chemical name, there may be a problem of doing so for both animal and human food labeling purposes at the same time. This may delay action in the animal labeling field.

Kits Contain Hog Cholera Information

CHICAGO—Leaders in the efforts to eradicate hog cholera will have complete kits of information to guide them in setting up local, county or state programs. Distribution of this material, prepared jointly by the U.S. Department of Agriculture and Livestock Conservation, Inc., is getting under way, reports R. Harvey Dastrup, executive director of LCI and secretary of the national LCI hog cholera committee.

Charles E. Bell, Jr., federal extension service, USDA, headed an educational sub-committee of the national group in selecting and preparing the material. The federal extension service will provide the kits for agricultural extension workers and other land grant college personnel and LCI has assumed responsibility of making them available to leaders in groups related to and allied with the swine and pork industry.

In addition to promoting a higher rate of hog cholera immunization and distribution of educational material, the national hog cholera committee is assuming responsibility for encouraging and assisting with the organization of state eradication groups. This latter action was taken in a meeting of the committee held in conjunction with the hog cholera workshop session at the recent 4th National Swine Industry Conference in St. Louis.

The LCI hog cholera committee has outlined a 9-point program for hog cholera eradication:

Vaccinate all hogs, heat-treat all garbage (table refuse), prohibit use of virulent hog cholera virus for general field use, report all cases of hog cholera, quarantine cholera-infested premises, properly dispose of all infected and exposed hogs, thoroughly clean and disinfect all premises where hog cholera has occurred, control inter and intra state movement of hogs and initiate and maintain an educational and information program on hog cholera and its eradication.

Farmer's Financial Position Held in Optimistic Light

WASHINGTON—What's good for the farmer is often good for the feed industry. So, the feed man should feel a bit optimistic about 1962 when he learns that the U.S. Department of Agriculture expects this year's improvement in the credit and financial situation of farmers to carry forward and perhaps increase somewhat in the new year.

Underlying this financial improvement, says James P. Cavin, USDA economic researcher, is an increase in farm income and a resumption in the rise of farm real estate values which came to a temporary halt in 1960.

Record Assets

He reported at the 39th annual Agricultural Outlook Conference here that the total value of all farm assets is expected to attain a record high level of about $211 billion by the beginning of 1962, which would be an increase of about $5.2 billion or 2½% above a year earlier.

Farm debts have shown a substantial rise, too—a gain of about $1.8 billion to something like $27.8 billion is expected by the beginning of 1962—but, as noted by Mr. Cavin, this farm debt gain is expected to be less than the rise in assets. Equities of farmers and other owners of farm property probably will show an increase of about $3 billion for the year as a whole.

As USDA sees it, farm income gains registered for 1961 will be maintained in 1962—but little overall change is anticipated in the realized net income of farm operators, total volume of farm marketings or average prices received by farmers.

The net income outlook is darkened somewhat by an expected continuation of advances in farm production expenses.

Net income realized by farm operators this year is now expected to total around a billion dollars more than the $11.7 billion estimated for 1960. And the outlook points to a 1962 total of about the same size. However, farm expenses may reach a record high when 1961 figures are added up—maybe about $500 million more than the $26.4 billion 1960 total—and some further increases are expected in 1962.

Feed Cost

Consider the cost of feed, for example. USDA says gross returns per dollar of feed cost have declined from a year ago for all livestock enterprises except beef production. Gross returns per dollar of feed cost for beef raising increased 5%, but very significant declines occurred in 1961 in gross returns per dollar of feed cost for poultry and eggs—turkeys, 29%; broilers, 18%, and eggs, 16%. Declines of 5% or less were noted for milk, butterfat, hogs and sheep.

Harold F. Breimyer, staff economist of USDA's Agricultural Marketing Service, holds the conviction that general trends in the national economy have more significance to agriculture for the intermediate run than the short run.

He also questions whether the outlook for export demand for farm products has as much bearing on annual changes in farm income as it once did. "When prospects for domestic and foreign demand for farm products are set forth . . . it would be helpful if implications for farm income could be separated from those features which involve chiefly a transfer of commodities that are in government hands," he said at the agricultural outlook conference.

TURKEY MAN ELECTED

SALT LAKE CITY—Herbert Beyers, Salt Lake general manager of the Norbest Turkey Growers Assn., has been elected a director of the Farm Credit Bank, Berkeley, Cal.

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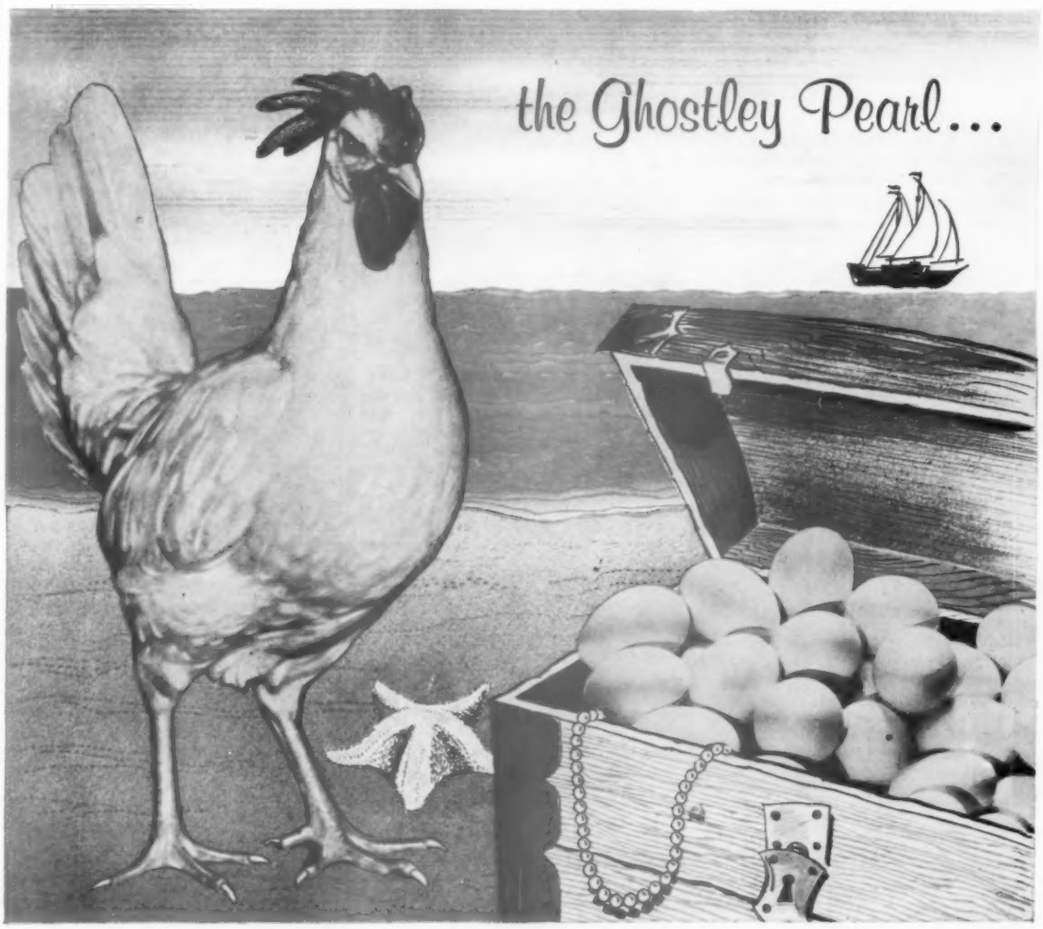

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SCENES AT FLORIDA CONFERENCE—Florida Feed Dealers Assn. members and wives of members were pictured at annual conference on Grand Bahama Island. First photo, Joe Vandepoplutere, left, Purina, Tampa, and Dr. George Combs, University of Florida staff, take a coffee break. Second photo, wives frolicked in the tropical sun while husbands worked. On a treasure hunt around the island, Mrs. Marian Feaster, left, and Mrs. Helen Godwin won prizes for originality in making hats out of palm fronds. Dr. J. P. Feaster, University of Florida, is in the center. Third photo, pictures during a break were: left to right, Lou Dye, Ted Shields, and W. L. Jackson strolling around the tropical gardens of the Grand Bahama Hotel.

Latest USDA Question and Answer Sheet Explains Turkey Marketing Order Items

WASHINGTON—The U.S. Department of Agriculture, in addition to supplying speakers for meetings, has been cranking out information sheets on marketing orders and agreements. The latest is a question and answer sheet on the proposed turkey marketing orders.

Most of the proposed marketing order provisions have been published in Feedstuffs. Also, pertinent points from various analyses have been published. However, it may be of interest to see what USDA has to say in the form of questions and answers. Following are excerpts from the question and answer material for both the hatching egg and market turkey orders. The excerpts include material on some of the points which have received particular attention and brought various questions.

HATCHING EGGS

Q. Would volume regulations for handlers depend upon a marketing policy as established by the marketing order committee?

A. Yes. Prior to the beginning of each allotment period, the committee would prepare and submit to the secretary a report setting forth its general marketing policy for that allotment period. Notice of this policy would be made available to all producers and handlers of turkey hatching eggs. The report would include the probable supply and demand for market turkeys for the following year, and the number of hatching eggs which probably should be set in the allotment period to insure a sufficient supply of turkeys for consumers.

Q. In the marketing policy report, could consideration be given to different regulations for hatching eggs for different types of turkeys?

A. Yes.

Q. Could consideration be given to regulating different production regions or districts?

A. Yes.

Q. What is the allotment period for hatching eggs that the general marketing policy would cover?

A. The 12-month period beginning on Oct. 1 of each year and ending on Sept. 30 of the following year—or such other period as may be recommended by the turkey hatching egg committee and approved by the secretary of agriculture.

Q. Under Method No. 1, which regulates volume by establishing the desirable quantity of hatching eggs which all handlers may set, or cause to be set, in the allotment period, how would the quantity be prorated among handlers?

A. Each handler would be assigned an allocation base for the allotment period. It would be computed, at the handler's option, in one of the following ways: (1) The total number of the handler's own hatching eggs which the handler set, or caused to be set, in the 12-month period ended Sept. 30, 1961; or (2) the total number of the handler's own hatching eggs which the handler set, or caused to be set, in the 24-month period ended Sept. 30, 1961, divided by two.

Q. Are there any provisions for a handler who set no hatching eggs, or whose setting of eggs was not representative during the base period?

A. Yes. The handler may be assigned an allocation base when he establishes that he has a plant and facilities for the hatching of eggs and an established available supply of eggs.

Q. How does a handler get an allocation base for the allotment period?

A. By filing with the committee an application not later than six weeks preceding the allotment period. The application must be on forms prescribed by the committee and provide all information required by the committee.

Q. How is a handler's allotment of hatching eggs determined?

A. By computing the percentage his allocation base is of the total allocation base for all handlers, and multiplying the desirable hatch (as established by the secretary for the allotment period) by the percentage so computed.

Q. Can the hatching egg quantity be further regulated within an allotment period?

A. Yes. Ailotments may be established by quarters or other fractions of the total period. The committee would then prorate among all handlers the amount established.

Q. What if the handler does not set (or cause to be set) his total allotment within the allotment period?

A. The handler may carry over into the next period that percentage of the unused allotment which may be designated by regulations.

Q. Can handler allocation bases and allotments be transferred?

A. Only in these special circumstances and only after approval by the committee and by the secretary: (1) in the event of a transfer of a hatchery, the base or allotment would go to the person acquiring and continuing the use of the hatchery; (2) in event that fire, flood, or other similar occurrence prevents the use of a hatchery, all or any part of the base allotment may be transferred.

Q. Do these special circumstances apply to a handler whose eggs are hatched at a hatchery not his own?

A. Yes, upon approval by the committee and by the secretary, his base or allotment may be used at any hatchery.

Q. In Method No. 2 for volume regulation, which establishes the quantity of hatching eggs which all handlers may receive at hatcheries for hatching in the allotment period, would the quantity prorated among handlers be reallocated in terms of producer marketings?

A. Yes. An allocation base would be assigned each producer, computed at his option by using (1) the producer's total marketings or use of hatching eggs in the 12-month period ended Sept. 30, 1961; or (2) the producer's total marketings or use of hatching eggs in the 24-month period ended Sept. 30, 1961, divided by two; or (3) half of any 24-month period established by the secretary of agriculture.

Q. Can a producer receive an allocation base if he has produced no hatching eggs in the period provided above, or whose production of hatching eggs in the period was not representative?

A. Yes, if his application is accepted by the committee and approved by the secretary. His plant production capacity and his established available breeder hens for the allotment period would be taken into consideration.

Q. How would a producer obtain an allocation base for the allotment period?

A. By filing application not later than six weeks preceding the start of the allotment period.

Q. How is the producer allotment of hatching eggs computed?

A. By determining the percentage which each producer's allocation base is of the total base for all producers, and multiplying by this percentage for the allotment period.

Q. Can the quantity to be acquired by handlers be further regulated during the allotment period?

A. Yes. The regulations may establish that part of the allotment to be acquired by all handlers for the entire allotment period be ac-

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quired during specified quarters or other fractions of the period, with the portion prorated among producers in the same manner as for the entire allotment period.

Q. Can producer allocation bases and allotments be transferred?

A. Yes, under these circumstances and with approval of the secretary: (1) in the event of a transfer of the producer's entire production facilities, they may be transferred to the person acquiring and continuing the use of the facilities; and (2) in event that fire, flood, or other similar circumstances prevent the use of the original producer's production facilities for all or part of the allotment period, they may be transferred to another producer.

Q. Under Method No. 3 for volume regulation, which establishes the desirable free quantity of hatching eggs which all handlers may set in an established period at their hatcheries, for their own account or for others, what happens if it appears the number of eggs available for hatching will exceed the desirable free quantity?

A. Regulations may be applied to establish a free and surplus percentage for hatching eggs received by handlers within the designated period.

Q. Could the surplus percentage be modified during any period?

A. Yes.

Q. How would the handler compute the quantity of eggs from each lot received that would be withheld from setting for hatching?

A. By multiplying the total number of hatching eggs in each lot by the surplus percentage.

Q. What happens to the withheld eggs?

A. They would be disposed of in a manner, and subject to such safeguards as the committee, with the approval of the secretary, may prescribe.

Q. What is meant by egg lot received?

A. Each day's receipts of hatching eggs at the hatchery from any person, and/or each day's receipts of eggs of the handler's own production, would be a separate lot.

Q. Would there be established some means of certification of allotments of handlers or producers under the volume regulation method?

A. Yes.

TURKEYS

Q. What regulations for limiting the handling of turkeys are proposed in the turkey marketing order?

A. Regulations may be applied to limit the handling of grades, sizes, quantities or packs; to limit the handling by establishing, in terms of grade size or quality, minimum standards of quality; to fix free and surplus percentages for handling, and for the pooling of surplus turkeys, and to limit the handling of turkeys differently for different types.

Q. Would volume regulation proposed for turkeys apply to percentage set-asides at the handler level?

A. Yes. For each handler, the set-aside would be computed by multiplying the quantity of all turkeys handled by him in the set-aside period by the surplus percentage established for the period.

Q. Would handlers be compensated for costs of processing, storing, etc., of the set-aside turkeys?

A. Yes. The handlers would bear such costs initially, but later would be reimbursed pro rata from funds obtained from sales of the reserve pool.

Q. Would the producer be paid for his share of the set-aside turkeys when they are declared surplus and placed in the reserve pool?

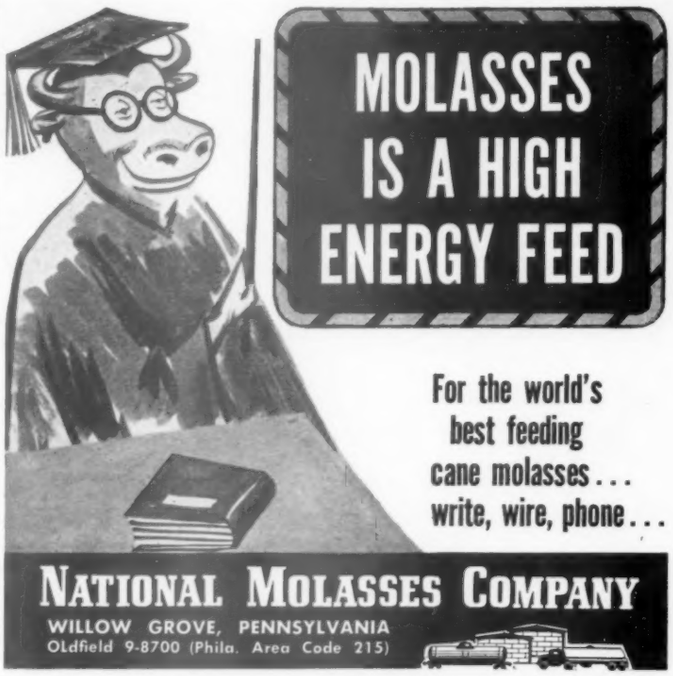
A. No. Net proceeds from sale of the reserve pool would be distributed after the set-aside turkeys were sold.

Q. How would distribution to producers be made?

A. The handler would determine each producer's interest or equity in the handler's total set-aside, with payment made on this percentage.

Q. On what basis would the equity be determined?

A. On the type, grade and quantity of turkeys received by the handler from the producer.



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Names in the News

COBB NAMES DELMARVA REPRESENTATIVE — Alden E. Loberg has been named a sales and service representative for Cobb's Pedigreed Chicks, Inc., it was announced by H. Ted Raymond, Jr., Cobb sales manager.

Alden E. Loberg

Mr. Loberg will represent Cobb White Rocks in a six-state area including Delaware, Maryland, Virginia West Virginia, Pennsylvania and New Jersey. For the past three years, Mr. Loberg represented one of the largest feed firms in the U.S. on the East Coast. For nearly 20 years prior to that he served with the same company in the New England area. Mr. Loberg owned and operated a 6,000 bird laying unit in New Hampshire. He has experience in raising broilers, caponettes and turkeys.

GENERAL MILLS APPOINTS HEAD OF NEW INTERNATIONAL DIVISION — General Mills, Minneapolis, has established a new international division headed by W. F. Mitchell, vice president and general manager of the company's chemical division, according to Gen. E. W. Rawlings, president.

The new division will be responsible for development of General Mills' overseas operations. Mr. Mitchell, who will now serve as vice president in charge of both the chemical and international divisions, joined General Mills as chemical division general manager in 1955. He was appointed vice president in 1959.

JOHN J. RAWLINS NAMED KEENCO ASSISTANT SALES MANAGER — John J. Rawlins has been appointed assistant sales manager of the Keen Mfg. Corp., it was announced by Everett M. Keen, president.

John J. Rawlins

A graduate of Temple University, Mr. Rawlins was merchandising and marketing manager of Nemarow Advertising Agency, Vineland, N.J., prior to joining Keenco. One of his principal activities will be liaison between Keenco and the agency. He will also help to coordinate the flow of technical information on Keenco products to poultrymen throughout the U.S. and the world.

Mr. Rawlins is a licensed stationary engineer and was employed in this field several years before specializing in agricultural equipment promotion.

DEMPSTER MILL CO. PROMOTES ROBERT L. HARRIS — Dempster Mill Mfg. Co., Beatrice, Neb., has announced the promotion of Robert L. Harris to manager of the newly created crop conditioning, handling and sales department.

Mr. Harris joined Dempster in 1959 and directed sales in Illinois, Indiana, Ohio and Michigan. He had formerly spent seven years in grain storage and conditioning sales, including work in both the Middle West and the South.

FRED M. McCLELLAN, FROEDTERT MALT, NAMED TO KENTUCKY DERBY FESTIVAL POST — Fred M. McClellan, Froedtert Malt Corp. vice president in charge of the southern region with headquarters in Louisville, Ky., has been named president of the Kentucky Derby Festival committee for 1962. The 7th annual derby festival will be April 27-May 3. Mr. McClellan has been with Froedtert 28 years.

STALEY CO. ASSIGNS K. P. NOREEN—K. P. Noreen has been assigned as an industrial sales representative to the Chicago branch office of the A. E. Staley Mfg. Co., Decatur, Ill., according to N. K. Hammer, national industrial sales manager.

K. P. Noreen

Mr. Noreen is a graduate of the University of Minnesota and Washington University, St. Louis. Before joining Staley earlier this year, he was employed by the Pillsbury Co. and Monsanto Chemical Co.

Mr. Noreen recently completed a training course to familiarize himself with some 200 industrial products manufactured by the central Illinois corn, soybean and chemical processor.

TWO APPOINTED BY ST. REGIS BAG DIVISION—The bag division of St. Regis Paper Co., New York, has appointed Richard P. Allen sales representative in the Michigan market area, and William R. Strange sales representative in the southern region.

Mr. Allen will headquarter in Detroit. He returns to that city after several years in California and Arizona.

Mr. Strange will headquarter in New Orleans. He was formerly sales representative for the company's Lone Star bag division in Houston.

H. GEORGE WOLFE, MERCK OFFICIAL, TO COORDINATE PEACE CORPS ADVERTISING CAMPAIGN—H. George Wolfe, advertising manager of the Merck chemical division, Merck & Co., Inc., Rahway, N.J., will coordinate a national public service advertising campaign to assist the Peace Corps.

The campaign will be designed to obtain additional Peace Corps personnel to meet mounting requests from abroad. The campaign will be conducted by the Advertising Council, which will provide newspapers, farm journals and college publications with informational advertising, and will supply radio stations throughout the country with recruiting messages detailing the skills required and the steps necessary for application and testing.

PEACE CORPS CAMPAIGN — H. George Wolfe, right, advertising manager of Merck chemical division, is seen discussing plans for a Peace Corps national public service advertising campaign with R. Sargent Shriver, center, director of the Peace Corps, and Sheldon Sosna, left, vice president of a New York advertising agency. Mr. Wolfe will coordinate the campaign to alert Americans with certain skills to the growing need for Peace Corps volunteers.

The campaign, starting in January, is to alert Americans who have particular skills to the growing need for Peace Corps volunteers.

The advertising campaign is being created by Doherty, Clifford, Steers & Shenfield, Inc., New York, as the volunteer agency. (See accompanying photo.)

UNION BAG-CAMP NAMES RICHARD R. CHASE TO NEW POST — Union Bag-Camp Paper Corp., New York, has appointed Richard R. Chase to the newly created post of director, sales technical services. He will headquarter in the company's New York office.

Richard R. Chase

A member of the Union organization since 1948, Mr. Chase served most recently as assistant manager, technical division, at the Savannah plant. All of the company's sales technical services will be consolidated and centralized into one department under his direction.

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NUTRITION RESEARCH AWARD — Winner of the 1961 American Feed Manufacturers Assn. award for the most outstanding contribution to animal nutrition research is Dr. James H. Meyer, center, head of the department of animal husbandry, University of California, Davis. (Feedstuffs, Dec. 2, page 11.) Shown presenting an AFMA $1,000 check during recognition ceremonies at the 53rd annual meeting of the American Society of Animal Science in Chicago is AFMA's president, W. E. Glennon, left. Also participating in the ceremony was Dr. Orville G. Bentley, chairman of the society's awards committee. Dr. Bentley, dean of agriculture, South Dakota State College, College Station, was 1958 recipient of the same award.

CCA Annual Report Cites Progress in New Areas, Research

KANSAS CITY — Reports on a number of new activities and its research program were included in the recently issued annual report of Consumer Cooperative Assn., farm supply cooperative, headquartered here.

The report stated that by the end of the fiscal year, Aug. 31, the 14th feed mill was being built under the cooperative's complete feed mill program for member co-ops. CCA says that it is the only organization in the Midwest offering a program including surveys of the animal population of the area of the proposed mills, estimates of the amounts of feed likely to be bought from the mill and equipment designed for the specific area and its needs.

It was pointed out that this feed mill program will employ another engineer during the coming year and that 10 more mills are planned for the coming year.

The cooperative indicated plans for a new feed mill in Oklahoma during the coming year. Surveys on the type of mill and locations are under way.

In the area of research work, it was pointed out that the cooperative during the last year increased its service and control work on finished feeds and ingredients by 270% and on feed fortifiers by 166%.

Concerning an allied field, education, it was stated that the first classes were held in the firm's new School of Cooperation in October. This 37,000 sq. ft. building with living space for 55 persons, near the co-op headquarters, the firm noted, permits expansion of a program that has provided training in leadership and job skills, information about products and cooperation and facilities for implementing results of research.

A report on Farmbest, Inc., a subsidiary of CCA, indicated gains in development of a cooperative program for western Iowa swine producers. CCA stated that this program to get pork from the producer to the consumer on a cooperative basis will take a "giant step" Jan. 1 when the packing plant at Denison, Iowa, will start operating on a strictly cooperative basis with at least 2,000 farmer-members.

At that time, CCA said, all hogs killed at the plant are expected to come directly from farmers who sell their animals at Denison or at buying stations at Shenandoah, Rippey or Pocahontas, Iowa.

It was also pointed out that the capacity of the plant will soon be enlarged from a 12,000 hog kill per week basis to kill 20,000 and cut 10,000 hogs per week.

The annual report continued, "The swine program ultimately will tie packing plant operations closely with development of meat-type animals at CCA's testing stations at Eagle Grove and Ida Grove, Iowa. It will provide extra benefits to farmers who produce meat-type hogs and who use Co-op feeds. And it includes plans to help producers finance their operations."

CCA says that 1,450 boars have graduated from the first six tests at CCA's swine testing stations and have already sired an estimated 350,000 or more market hogs.

On the subject of egg marketing, the Farmbest report states that surveys and research have been under way since June to determine what action CCA should take in the field. That section of the report concluded, "More study is necessary before the course of action can be determined."

PENB Group Considers Deboning Machine Idea

CHICAGO — Deboning of poultry was mentioned as a major obstacle hindering all-out pursuit of the market afforded through feeding of needy people when the Poultry & Egg National Board's new products development group met here recently.

Before volume feeding of prepared poultry foods can be accomplished, the group indicated, the cost of deboning needs to be trimmed.

A guest of the group, C. J. Smith, Rockford (Ill.) Package & Container Corp., joined the discussion and described a deboning machine design owned by Rockford. He said he felt the design fits the needs of the poultry industry.

Members of the PENB group considered the possibility of a commercial company, PENB, National Broiler Council or a similar organization obtaining funds to manufacture the deboning machine. It was suggested that a prototype could be built and presented to a commercial firm for manufacturing consideration. The cost of this deboning machine was estimated at $10,000 per unit.

NEW VIGORTONE BUILDING—This is an artist's sketch of what the new Vigortone Products, Inc., building will look like. The plant and office building is now under construction on the north edge of Cedar Rapids, Iowa. In the 55,000 sq. ft. building, the company will be able to produce about 150 tons of vitamin, mineral and antibiotic premixes per day. Completion date is set for early spring. (Feedstuffs, Oct. 28.)

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NUTRITIONIST

We have a need for a graduate livestock nutritionist with successful sales background to organize and conduct sales schools for a progressive direct selling organization in Iowa. Earnings commensurate to ability and experience. All replies treated in confidence.

Address Ad No. 7485, Feedstuffs Minneapolis 40, Minn.

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A progressive direct selling midwestern feed company has regional manager position open for man experienced in animal nutrition, plus successful feed sales background.

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1957 DAFFIN MOBILE FEED MILL, USED little, excellent condition. Priced to sell. Garland Bernhardt, Rt. 3, Tomah, Wis.

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BEEF CATTLE

(Continued from page 10)

ers have been observing the feeding of high levels of either Aureomycin or Terramycin for a short period during the breeding season resulting in larger litters and more pigs weaned. A Florida experiment using zinc bacitracin fed at a level of 200 gm. per ton of feed 21 days prior to breeding and 25 days post breeding failed to influence ovulation rate or embryonic survival during first 25 days of pregnancy. More research results may be available soon on this, he said.

It seems clear that the most critical aspects of feeding for meatier carcasses relate to optimum nutrition, particularly protein, during the early growth period and control of fat deposition during finishing period. Most studies agree that high protein intakes favor meatier carcasses.

Influence of lysine supplementation and protein source on gossypol toxicity in young pigs indicates that addition of lysine to a corn-cottonseed meal ration containing toxic levels of gossypol reduced mortality and improved performance. Other studies show that soybean oil meal rations at all levels of added free gossypol produced superior results. It is possible that the greater amount of lysine present in soybean meal also accounted for this result, he said.

CITRUS PULP AS A FEED—RE-EVALUATION — Considerable study is still under way in Florida on citrus pulp and additional data in the future may be available. Drs. C. B. Ammerman, assistant animal nutritionist, and L. R. Arrington, associate animal nutritionist, experiment station, are conducting these trials.

Some variations have been noted in different colored pulp. Based on both protein and energy digestibility the whole pulp or whole pulp with meal appeared to be the most valuable in tests with lambs. Citrus meal was less valuable, followed in turn by the light pellets, with the dark pellets having the least nutritional value. Previous tests have been made with steers to obtain nutrient digestibility coefficients.

The average digestibility coefficients obtained in a ration containing approximately 0.16% phosphorus and 1.5% calcium were as follows: crude protein, 50; ether extract, 80; crude fiber, 70, and nitrogen-free extract, 84.

TEXTURE OF GRAIN FOR DAIRY-BEEF CATTLE FEEDS — Texture implies particle size, shape and density through grinding, rolling, crimping, flaking, pelleting, crumbling or expanding processes. While texture may have its eye appeal to the feedman, the real importance lies in its effect on acceptability and efficiency of utilization by the cow.

Dr. J. P. Hentges, Jr., animal nutritionist at Florida, traced feeding trials with dairy heifers given free-choice access to sorghum grains processed by six methods. Preference was shown for: roll cracked, flaked (steam crimped), water tempered and rolled, hammermill ground, pelleted (3/16) and pearled. Beef calves ate 5% more pelleted than nonpelleted creep feed consisting largely of corn. Beef heifers fed flaked corn consumed less total feed than heifers fed ground corn with either pelleted or long hay, requiring 78 to 90 lb. less feed/cwt. gain. Similar results were obtained with beef steers and lambs fed ground or heated (crumbled) corn plus ground hay and soybean meal. The crumbled corn had been cooked under steam pressure, dried, flaked and pelleted before crumbling. Yearling beef steers full fed corn silage and either ground, flaked or pelleted corn gained about the same but feed/cwt. gain was 100 to 140 lb. less with the heat treated flakes and pellets. Observations on yearling beef heifers in a commercial feedlot were that steam rolled barley provided 0.4 lb./day faster gains with 105 lb. less feed/cwt. gain as compared to dry rolled barley. In a comparison of ground, cracked, flaked and pelleted corn, yearling beef steers consumed slightly less of the heat-treated flakes and pellets but these provided the most efficient gains. Observations of smaller daily consumption but more efficient utilization of flaked corn for weight gains are consistent and suggest a more efficient bacterial and protozoal conversion of starches from heat processed grains into energy.

The steam processing of materials compressed into pellets may be a factor in their biological value. Reduced particle size and faster rate of passage are also factors. One may conclude from trials that with highly concentrated rations, steam pelleting may cause a reduction in daily gain but markedly improved feed efficiency.

EFFECT OF CALCIUM - PHOSPHORUS RATIO ON MINERAL REQUIREMENTS OF POULTRY — As phosphorus is an expensive item in poultry diets there has been continued research to determine the exact requirement of this mineral for all species of poultry, and to determine the availability of phosphorus from various sources, Dr. Robert H. Harms, poultry husbandman, Florida, said. Interest has been stimulated to determine the minimum amount of calcium in the feed which still gives maximum bird performance, since it has been shown that the effectiveness of tetracycline antibiotics can be greatly enhanced by feeding diets low in calcium.

Results conducted in Florida indicated that the calcium-phosphorus ratio is very critical when attempting to determine the availability of phosphorus from various sources. Widening the Ca:P ratio resulted in decreasing the performance of chicks, with the greatest effect observed from widening the ratio with diets containing the lower levels of phosphorus. Recent tests indicated that the Ca:P ratio is not critical when an adequate amount of both minerals is present in the diet.

EXCESSIVE CALCIUM IN LIVESTOCK RATIONS—The recognition of varied and complex functions of calcium has undoubtedly contributed to indiscriminate usage in many of our present rations and feeding practices, Dr. George E. Combs, nutritionist at Florida, said. Calcium has been shown to adversely influence performance when provided in amounts which exceed that required for maintenance of adequate nutritional status. With ruminants an excessive quantity has resulted in decreased gains and an increase in feed required for gain. Among adverse effects associated with excess calcium in swine rations are decreased rate and efficiency of gain, lowered coefficients of digestion and increased incidence of parakeratosis.

Although the mechanism of this depressing action is presently unknown, the severity of results indicates the need for re-evaluation of many of the present livestock rations with respect to calcium content.

FACTORS AFFECTING EGG SHELL QUALITY—The problem of poor egg shell quality is encountered each year in the late spring or early summer, with the problem continuing until cooler weather sets in, said Dr. J. R. Couch of Texas A&M. While it is a well-known fact that shell quality is an inherited characteristic, researchers have been able to establish lines of chickens which laid thin-shelled eggs and others which produced thicker shells. Much responsibility rests with the breeder and geneticist to eliminate individuals and families that have a thin-shelled tendency.

Formulation of laying feeds by season was recommended by Dr. Couch. Added calcium and possibly an increase in trace mineral levels in a formula will improve shell quality.

As to additives, there are a number of them known to affect shell quality. All producers are familiar with nicarbazin, an excellent coccidiostat which will affect egg shell quality adversely if added to laying feed by mistake at very low levels. Conversely, the addition of reserpine, a tranquilizer, has been found to improve quality slightly in a number of laboratories. Improvement was not great but could be of significance economically.

Arasan-treated seed corn included in laying mash formulas can provide the level of the drug high enough to produce soft shelled eggs and eggs with poor quality as well as of abnormal shape. Where diethylstilbestrol, which is used widely in fattening cattle, has been used, and poultry feed is mixed in the same equipment, there could be enough of a residue to cause soft shells.

It was demonstrated 25 years ago that there was a definite mottling in shells from hens fed diets low in manganese.

Calcium is the most significant nutrient affecting shell quality. It was Dr. Couch's recommendation that all of the calcium supplement be included in the total laying mash formula and that the level be at least 2.75% from Nov. 1 to April 30 and 3 to 3½% from May 1 to Oct. 30.

RESTRICTED FEEDING OF BROILER BREEDER HENS—Dr. J. R. Couch of Texas A&M College reviewed Connecticut work on controlled feeding of broiler breeding hens, including the recently studied skip-a-day feeding system.

He also described Texas studies conducted from 1959 through 1961. From the results of these studies, he said, it appears that a breeder formula containing 700 Calories of productive energy per pound with rice hulls as the diluent will produce maximum egg production and hatchability of fertile eggs and maintain the general health and well being of the flock in better condition.

Mrs. Ghostley Dies

ANOKA, MINN.—Mrs. George F. Ghostley, co-founder with her husband, Dr. Ghostley, of Ghostley's Poultry Farms, Inc., Anoka, died recently in Anoka.

Survivors are her husband and two sons, Fred and John. Fred is president and general manager and John is vice president of the business. Mrs. Ghostley was well known for her part in developing the Ghostley strain of chickens.

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CONTROLS

(Continued from page 1)

ported to have found a receptive audience among many of the poultrymen, who generally expressed the feeling that the industry was in bad shape and that anything pointing to better financial days was sure of consideration.

USDA Officials Talk

Secretary of Agriculture Orville Freeman made a short pep talk type of speech to the committee, and his vigorous assistant, Dr. James Ralph, leading exponent of marketing orders, took over to tell the group that the proposed program was not intended as a government control program but rather as a "self-help" program designed by an industry and to be run and operated by an industry committee. He said the government would act only as umpire or arbiter of the rules. The group also was told that the program would be industry-financed, thereby by-passing objections that the farm programs cost the taxpayers money.

Since the purpose of marketing orders is to raise prices which ultimately would be paid by the consumer, it would seem that the consumer or taxpayer would shoulder the financial cost in any event.

The current drive here to make agreements and orders operative for the broiler industry follows heated debate earlier this year when Congress rejected an amendment to the Agricultural Marketing Agreement Act of 1937 to include broilers within the framework of marketing orders.

At that time turkeys were included in coverage of the law. Now that proposed turkey orders are being examined, the drive for use of the controls has shifted to chickens. And if the turkey proposals are submitted to a referendum and approved, it seems probable that similar results would prevail in the broiler industry, although a program for the latter industry contains larger implications and more aspects than in the turkey industry.

Favorable Recommendation Seen

It seems probable that the industry committee named by USDA—which is directed to report to USDA not later than Jan. 6, right after Congress reconvenes—will turn in a favorable recommendation, unless the turkey program appears likely to be dropped or rejected.

Legislation is pending in both chambers of Congress, subject to renewed attention next year, which would permit the type of controls that USDA is now advocating for the poultry industry.

Much of the support for this legislation is said to center among some of the southern broiler interests which have built up large production bases which would be used as the basis for allotments—sort of a built-in lion's share of the poultry market.

Some observers say that the "self-help" aspect seems to be rather weighted in behalf of the southern producers, although their lower production cost would obviously always be a significant factor in the location of production facilities, except for distant markets where the freight pattern would encourage local industry.

As in the case of the turkey industry considerations, it takes some time for industry opinion to crystallize in these matters. Primarily, the poultry industry is a relatively green hand in the marketing agreement and order operations. And while USDA presents them as a "self-help" method which could result in better prices to producers or ultimately to parity, it must be noted that there are many pitfalls which are not always clearly explained to an industry. After all, when you are selling something, you certainly do not point out some of the potentially bad aspects of the product.

To Meet Congressmen

DES MOINES—The Western Grain & Feed Association of Iowa has announced plans for a series of meetings during the next two weeks in which its members in the various Iowa congressional districts will have an opportunity to meet their congressmen.

Bob Skinner, executive vice president of the association, said the meetings will give members an opportunity to talk with the congressmen about legislation concerning taxation, Food and Drug regulations, feed grain programs and preservation of the free enterprise system.

The following meetings have been scheduled: Fifth district, Rep. Neal Smith, Dec. 11, 2 p.m., Hotel Fort Des Moines, Des Moines; fourth district, Rep. John Kyl, Dec. 13, 2 p.m., Elmhurst Country Club, Oskaloosa, Iowa; first district, Rep. Fred Schwengel, Dec. 15, 2:45 p.m., Muscatine Hotel, Muscatine, Iowa, and second district, Rep. James Bromwell, Dec. 18, 7 p.m., Mealey Hotel, Oelwein, Iowa. Meetings in the third, sixth and seventh districts are yet to be scheduled, according to Mr. Skinner.

PRICES

(Continued from page 1)

week as prices ranged as much as 1¢ higher on large to 4½¢ higher on mediums, following earlier declines. The U.S. Department of Agriculture, however, reported that country point prices were slow to gain, with values in Midwest production areas as much as 3¢ lower on large to 2¢ lower on mediums when compared with those of a week earlier.

In Chicago, Dec. 7 prices on eggs ranged from 39-40¢ a dozen on grade A jumbos to 34-36¢ on large whites.

Activity in turkey trading was relatively light. Hens tended to firmness as farm supplies became shorter and were held for higher prices, according to USDA.

USDA said that movement of turkeys into storage amounted to 12,577,000 lb. in the 35 cities, far exceeding last year's movement of 2,362,000 lb.

Prices paid in the Minnesota live turkey market Dec. 6 were: Young hens, 17¢; young toms, 15¢, and fryer-roasters, 18-18½¢, about unchanged from a week earlier. Dec. 7 it was reported that activity was at a virtual standstill, and no quotations were available from USDA.

BROILERS

(Continued from page 1)

ingham, Ala.; H. F. McCarty, Jr., Magee, Miss.; Wesley Paris, Atlanta; John C. Ruber, Indianapolis, and Donald P. Corbett, St. Louis.

The official USDA announcement following the two-day meeting of the full committee said that the group "explored various possible methods to effect market stabilization for the broiler industry."

Roger C. Orndorff, Wardensville, W.Va., served as chairman for the first day's session.

Mr. Paris was named chairman of the advisory committee at the start of the business session the second day, and Henry C. Tilford, Jr., Shelbyville, Tenn., served as chairman for the afternoon session.

In the original announcement of the group, USDA said that the committee "will advise the Secretary of Agriculture on possible programs or legislation it considers necessary to manage supplies, stabilize markets and insure equitable producer return and prices fair to consumers. . . . At the request of industry, legislation has been introduced in Congress to remove poultry from the list of commodities which are ineligible for marketing orders under provisions of the Agricultural Marketing Agreement Act of 1937, as amended, and to authorize supply management provisions in a marketing order for poultry."

Dr. James T. Ralph, assistant secretary, is official USDA representative on the committee. Raphael V. Fitzgerald, assistant deputy administrator, ASCS, is deputy representative. Edward Karpoff of ASCS is executive secretary of the committee.

Members of the full committee are:

Alabama: Marshall B. Durbin, Sr., Birmingham, and A. W. Todd, Russellville; **Arkansas:** Ted Cameron, Little Rock; Quenton A. Goyne, Huntsville, and Joe F. Ray, Danville; **California:** James B. Williams, Fresno; **Delaware:** Preston E. Workman, Georgetown; **Georgia:** Paul N. Bandy, Ringgold; Julius F. Bishop, Athens; Charles W. Paris, Atlanta; Luther R. Tucker, Royston, and Max F. Ward, Gainesville; **Indiana:** John C. Raber, Indianapolis; **Maine:** Donald P. Corbett, now in St. Louis; **Maryland:** Edward H. Covell, Jr., Easton, and John Hargreaves, Federalsburg; **Mississippi:** Henry C. Clark, Hattiesburg; David E. Jones, Senatobia, and Hyman F. McCarty, Jr., Magee; **Missouri:** Albert Haslag, Bonnots Mill; **North Carolina:** Thomas U. Cameron, Raeford, and Herman C. Kennett, Durham; **Oregon:** Cornelius Bateson, Salem; **Pennsylvania:** John H. Hummel, Selinsgrove; **South Carolina:** Norman W. Sanders, Columbia; **Tennessee:** Henry C. Tilford, Jr., Shelbyville; **Texas:** Horace L. Sample, Smiley; **Virginia:** Elmer Clay, Blackstone; **West Virginia:** Roger C. Orndorff, Wardensville, and **Wisconsin:** Robert Boland, Arcadia.

CHANGES

(Continued from page 1)

Dr. Gordon W. Sprague, production and marketing economist for Land O'Lakes, testified at the opening session of one of a series of U.S. Department of Agriculture hearings on the suggested orders on turkeys and turkey hatching eggs. The Chicago hearing, at the LaSalle Hotel, opened Dec. 8. More than 300 persons were in attendance.

The schedule of witnesses placed Dr. Sprague among the "proponents," but he recommended various changes in the orders as now written, and he said it is Land O'Lakes' position that the decisions on whether there should be orders regulating the industry rest with producers. "The producers will make their own decisions and it (Land O'Lakes) will not endeavor to influence them either way," he said.

"Basic Considerations"

Dr. Sprague said, however, that the co-op believes if an order is put into effect there are certain "basic considerations" that should be adhered to in the writing of the order.

Among changes and provisions he outlined were some in the area of the set-aside provisions of the proposed order as it applies to handlers and in processing and marketing experimentation.

"Any organization which sells turkeys under established brands should have the privileges of obtaining turkeys from other handlers out of their supply of free turkeys which the purchaser could use to satisfy its set-aside obligations, rather than being required to put its own brand turkeys into set-aside," he said.

". . . It is our feeling that any organization engaged in activities of experimentation in selling turkeys in new and untried forms should have access to such set-aside turkeys for such purposes."

Dr. Sprague also said it is felt that the proposed order would be susceptible to a serious loophole if it did not contain provisions supervising or regulating the transfer of live flocks.

An order should also include regulations covering imports of hatching eggs, poults or turkeys from other countries, he commented.

"If there is to be an administered program of reduction of hatching eggs," he said, "some method must be employed whereby the reduction will be equitably apportioned among producers . . . conceivably, allotments could be determined for hatcheries, and hatcheries could be placed under license whereby they would be regulated in such manner as to assure an equitable market for hatching eggs and equitable distribution of poults to producers."

TOP OF THE HOPPER

(Continued from page 2)

and turkey feed operations. . . . Purina engineers have designed a "packaged" Check-R-Mix mill for the firm's dealers in grain areas. . . . The "built-in roughage" program for feedlot cattle is being followed by the same trend of complete ration feeding of lambs, and this is being further researched for dairy cows and riding horses. . . .

The sanitation division has shown marked growth, both in number of products and in dollar volume. . . . Growth in sales and acceptance has been "spectacular" for the international division. . . . The company's expanded dog food maintains its top position.

ACCORDING TO OFF-THE-CUFF comments heard at the hearing sites, the contents of the proposed turkey and turkey hatching egg marketing orders, as published by the U.S. Department of Agriculture in the Federal Register, surprised some members of the National Turkey Advisory Committee, which, with the help of USDA, had the job of formulating the proposals.

But, as far as we know, there has been no official testimony indicating that the proposals are not what the committee, as a whole, agreed upon.

A SAMPLE NEWS RELEASE prepared for eventual distribution to publications by South Dakota State College indicates that agricultural colleges around the country—their extension personnel in particular—are urging turkey producers and others with direct financial interest in the production of turkey meat or turkey hatching eggs to contact their county Agricultural Stabilization and Conservation and county extension offices immediately.

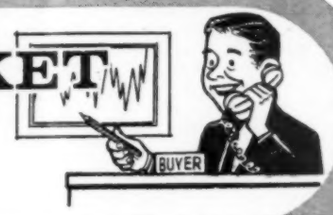
Why? To obtain lists of persons who may or may not be eligible to vote in a referendum, should one be called to determine whether producers want marketing orders for market turkeys and/or turkey hatching eggs.

The sample release from South Dakota State says, "Although specific rules for eligibility have not been outlined, they will be formulated as soon as hearings on the turkey marketing orders have been completed."

It appears that turkeymen are being or will be asked to tell the volume of production each represents when contacting ASC or extension personnel.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS



NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondants and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Chicago: Demand good; trend steady; supply fair; dehydrated, 17% protein, 100,000 units vitamin A $51.10@$1.60.

Kansas City: Demand fair; trend steady; supply adequate; 17% dehydrated alfalfa, 100,000 A pellets $46@48, reground pellets $47@49; 18% dehydrated alfalfa, 125,000 A pellets $47@51, reground pellets $48@52; 20% dehydrated alfalfa, 150,000 A pellets $52@58, reground pellets $54@59; all unchanged.

St. Louis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, 100,000 units vitamin A pellets $48, down 50¢.

Boston: Demand fair; trend unsettled; supply adequate; dehydrated, 17% $57.50, sacked, off $1.50; suncured, 13% $48, sacked, nominal, unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $51@55, unchanged.

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $54.50, unchanged; reground pellets $53.60, unchanged.

Buffalo: Demand and supply fair; trend higher; $61.60, sacked, Boston, up $1.

Los Angeles: Demand fair; trend unchanged to slightly firmer; supply adequate; dehydrated meal, 17% protein, 100,000 A $51@52; dehydrated pellet meal, 17% protein, 100,000 A $53@54, both up $1; suncured meal, 15% protein $41@42; suncured crumbles, 15% protein $43@44, both unchanged.

Ft. Worth: Demand fair for dehydrated, slow for suncured; trend steady; supply sufficient; sacked: dehydrated, 17%, 100,000 A $56@57, rail or truck, up 50¢@$1; suncured, 13%, ⅛-in. grind No. 1 $42, truck, unchanged.

Portland: Demand fairly active; trend unchanged for dehydrated, up for suncured; supply adequate; 15% suncured $40, sacked; 20% dehydrated pellet meal $48.50, sacked.

Seattle: Demand fair; trend firm; supply ample; suncured 15% protein $40, Seattle, unchanged; dehydrated, 150,000 A units $67, Seattle, unchanged.

Denver: Demand fair; supply ample; dehydrated $48, uncnanged.

Minneapolis: Demand fair; supplies adequate, prices unchanged; 17% dehydrated, 100,000 units vitamin A reground pellets $51, oiled reground $52.

ANIMAL FAT (STABILIZED)

Los Angeles: Demand slow; trend steady; supply ample; 5½¢ lb., unchanged.

St. Louis: Demand good; trend steady; supply ample; yellow grease 6¾¢ lb., delivered, tank trucks or cars.

Chicago: Demand excellent; trend up ½¢; supply fair; bleachable fancy tallow $5.50@5.62½ cwt., yellow grease $5.12½ cwt., tank truck or carload.

Boston: Demand and trend steady; supply steady; tallow 5⅝@5¾¢ lb., yellow grease 5¼@5¾¢ lb., both unchanged.

Memphis: Demand slow; trend steady; supply adequate locally; yellow grease 5¢ lb., up ½¢; prime tallow 5½¢ lb., up ½¢.

Ft. Worth: Demand good; trend firming up; supply sufficient; prime tallow, tank cars 5½¢ lb., drums 6⅝@7½¢ lb., f.o.b. north Texas packing plants with returnable drums, up ½¢.

Atlanta: Demand good; trend steady; supply short; 5¢ lb., f.o.b. Alabama and Georgia production points, unchanged.

St. Paul: Demand good; supplies ample; price unchanged; bleachable fancy 5⅜¢ lb., f.o.b. producer's plant.

BARLEY FEED

Baltimore: Demand fair; trend firm; supply ample; $43.50, sacked.

Chicago: Demand and supply fair; trend steady; $33, sacked.

Los Angeles: Demand slow; trend steady; supply adequate; $2.62½ cwt., unchanged.

Boston: Demand and supply light; trend steady; $45, up 50¢.

Seattle: Demand and supply fair; trend firm; $51.50, truck lots, up $1.

Denver: Demand fair; supply short; $2.50 sacked, $2.30 bulk, unchanged.

BLOOD MEAL

Chicago: Demand good; trend firm; supply fair; 80% protein $135, sacked.

Los Angeles: Demand slow; trend steady; supply ample; $5@5.25 a unit of ammonia, sacked, unchanged.

BONE MEAL (STEAMED)

Chicago: Demand fair; trend steady; supply ample; $97.50, sacked.

Los Angeles: Demand slow; trend steady; supply adequate; imported $78, 20 ton lots, sacked, unchanged.

Buffalo: Demand and trend steady; supply fair; $105, f.o.b. Buffalo, unchanged.

Boston: Demand and trend steady; supply steady; $105, unchanged.

Cincinnati: Demand fair; trend steady; supply good; $105, sacked, Cincinnati, unchanged.

Ft. Worth: Demand fair; trend steady; supply sufficient; domestic $100, sacked, f.o.b. Ft. Worth, unchanged.

Seattle: Demand fair; trend steady; supply good; $92, f.o.b. car Seattle, sacked, unchanged.

Denver: Demand light; trend steady; supply ample; $110, small lots, down $5.

BREWERS DRIED GRAINS

Boston: Demand good; trend firmer; supply adequate; 26% $56, up $4.

Los Angeles: Demand slow; trend steady; supply limited; $61, unchanged.

Buffalo: Demand fair; trend higher; supply fair to poor; $56, Boston, up $2.50.

St. Louis: Demand good; trend firmer; supply limited; 26% protein $45, up $1.

Chicago: Demand good; trend $1 higher; supply light; 26% protein $43@43.50.

Cincinnati: Demand poor; trend higher; supply adequate; $52, up $3.

Ft. Worth: Demand slow; trend steady; supply sufficient; 28% protein $58.10, sacked, December, unchanged.

BREWERS DRIED YEAST

Buffalo: Demand good; trend steady to higher; supply limited; $9.50 cwt., f.o.b. Buffalo, up 5¢.

Cincinnati: 9@10¢ lb., sacked, unchanged.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12½¢ lb., l.c.l.

Los Angeles: Demand slow; trend steady; supply adequate; 10¢ lb., 5 ton lots, sacked; 11¢ lb., 1 ton lots, sacked; 12¢ lb., less than ton lots, sacked; all unchanged.

Boston: Demand and trend steady; supply steady; 11¢ lb., unchanged.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

CALCIUM CARBONATE

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk in boxcars $8.05; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $11.50; bulk, hopper $11; coarse grind $1 premium, delivered Minneapolis.

Los Angeles: Demand slow; trend steady; supply adequate; flour $9.85, 20 ton cars, sacked; meal $10.20, 20 ton cars, sacked; both unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt., unchanged.

Ft. Worth: Demand normal; trend steady; supply sufficient; $7.50, sacked, f.o.b. north Texas, unchanged.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.

Denver: Demand fair; supply ample; $12.50, carload, unchanged.

COCONUT OIL MEAL

Los Angeles: Demand slow; trend firmer; supply adequate; copra cake $65, February, up $1@2.

Portland: Demand fair; trend steady to unchanged; supply adequate; 20% solvent $64.20.

Seattle: Demand fair; trend firm; supply ample; solvent type $73, f.o.b. car Seattle, sacked, up $2.

CONDENSED FISH SOLUBLES

Los Angeles: Demand slow; trend steady; supply adequate; 3½¢ lb., unchanged.

Boston: Demand good; trend strong; supply nil; withdrawn.

Denver: Demand weak; supply ample; 3¢ lb., f.o.b. West Coast, down ½¢.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $6 more)

Minneapolis: Feed $45.70, meal $72.70.
Atlanta: Feed $49.10, meal $76.10.
Birmingham: Feed $46.90, meal $73.90.
Boston: Feed $50.60, meal $77.60.
Chicago: Feed $39, meal $66.
Cleveland: Feed $47, meal $74.
Denver: Feed $49.30, meal $76.30.
Ft. Worth: Feed $49.80, meal $74.80.
Indianapolis: Feed $44.25, meal $71.25.
Kansas City: Feed $39, meal $66.
Louisville: Feed $45.55, meal $72.55.
New York: Feed $50.20, meal $77.20.
Norfolk: Feed $49.60, meal $76.60.
Philadelphia: Feed $49.80, meal $76.80.
St. Louis: Feed $39, meal $70.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $46, unchanged.

Seattle: Demand fair; trend easy; supply ample; feed $50, car, down $1.

COTTONSEED OIL MEAL

Memphis: Demand fair; trend steady; supply ample; prime 41% protein, old process $61, down 50¢; new process, 41% protein $60, unchanged.

Kansas City: Demand slow; trend steady; supply adequate; 41% solvent process $67.70@68.20, down $1; 41% old process $69.20@69.70, down 60¢.

Ft. Worth: Demand good; trend higher; light offerings; 41% old process $65@66, f.o.b. mills Ft. Worth, up $2@3; solvent 2% fat added $65, nominal, December-January; $64.60, February-April; loose hulls $13@15, unchanged.

Los Angeles: Better interest in demand; trend firm; supply adequate; $61, unchanged.

St. Louis: Demand good; trend firm; supply limited; 41% solvent process $61.50, unchanged.

Buffalo: Demand and supply fair; trend higher; $83.90, sacked, Boston, up $1.

Cincinnati: Demand poor; trend steady; supply adequate; $69, up 50¢.

Seattle: Demand good; trend firm; supply limited; 41% expeller $73, f.o.b. car Seattle, up $2.

Atlanta: Demand good; trend steady; supply tight; 41% $68, South Carolina, North Carolina and Georgia, up $1; $64, Mississippi and Tennesee, up $1.

Portland: Demand fairly active; trend stronger; supply ample; 41% solvent $71.70.

Denver: Demand fair; supply short; $70, up $2.50.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $43.50 sacked, $40.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $52, f.o.b. Tupelo in 100 lb. multiwall bags, $49 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, minimum fluorine .18% $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $69.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $66.35 bulk ($3.65 per unit of P).

Port Arthur, Texas: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload and truck load $65.75, sacked, 100 lb. multiwall bags; bulk $62.75, f.o.b. Port Arthur.

Muscatine, Iowa: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%, guaranteed uniform analysis, carload and truck load, $71.25, sacked, 100 lb. multiwall bags; bulk $68.25, f.o.b. Muscatine.

Cincinnati: 18% phosphorus, carlots $74.30, ton lots $84.30; 14% phosphorus, carlots $62.50, ton lots $72.50, Cincinnati, unchanged.

Ft. Worth: Demand good; trend steady; supply adequate; minimum 18% phosphorus, maximum 34% calcium, maximum .18% fluorine $73.45, sacked, unchanged.

DICALCIUM PHOSPHATE

Chicago: Bulk, carlots and truck loads, 18½% phosphate $78 and 21% phosphate $89; packed in 100 lb. papers, 10 tons or more, 18½% phosphate $81 and 21% $92; lesser quantities, 18½% phosphate $91 and 21% $102; above prices per ton, f.o.b. Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $81 (or $4.38 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $81, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $75.50, sacked, in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.

Trenton, Mich.: 18½% phosphorus and 23% calcium, bulk boxcar/hopper car $78; bagged $81; 21% phosphorus product production discontinued.

Buffalo: Demand and supply good; trend steady; $82.90, sacked, Boston, unchanged.

Cincinnati: 18½% phosphorus $88.80 bagged in carloads, $98.70 bagged in ton tons, f.o.b. Cincinnati; $81, f.o.b. production points; unchanged.

Los Angeles: Demand fair; trend steady; supply adequate; 18½% phosphorus $95.10, sacked, unchanged.

Ft. Worth: Demand fair; trend steady; supply adequate; $81.50, sacked, unchanged.

Seattle: Demand good; trend steady; supply limited; $91, ex-dock Seattle, sacked, unchanged.

Denver: Demand fair; supply ample; $91.50, Denver, 20 ton car, unchanged; $89.90, Denver, 30 ton car, unchanged.

DISTILLERS DRIED GRAINS

Buffalo: Demand good; trend higher; supply fair; $61, Boston, up $3.

Cincinnati: Demand fair; trend higher; supply tight; $48@52, up $1@7.

Boston: Demand fair; trend strong; supply light; $60, up $4.

DRIED BEET PULP

Boston: Demand and supply in balance; trend steady; $53, sacked, unchanged.

Buffalo: Demand fair; trend steady to lower; supply adequate; $52.50, sacked, Boston, off 50¢.

Los Angeles: Demand and trend steady; supply adequate; $48.50@48.70 at milk shed, unchanged.

Ft. Worth: Demand slow; supply sufficient; plain $55, sacked, December, unchanged.

Atlanta: Demand fair; trend steady; supply good; $53.40, sacked, delivered.

Portland: Demand fairly active; trend unchanged and mostly steady; supply ample; $45.50, sacked.

Denver: Demand fair; supply ample; $60, unchanged.

Seattle: Demand fair; trend steady; supply ample; $48, delivered carlots, sacked, unchanged.

DRIED BUTTERMILK

Los Angeles: Demand slow; trend steady; supply adequate; 14@14¾¢ lb., sacked, unchanged.

Buffalo: Demand fair; trend steady; supply adequate; $10.75 cwt., f.o.b. Buffalo, unchanged.

Chicago: Demand fair; trend steady; supply ample; medium acid $10.25@10.50 cwt., sweet cream $10.25@10.50 cwt., both sacked.

Boston: Demand and trend steady; supply steady; 14¢ lb., unchanged.

DRIED CITRUS PULP

Los Angeles: Demand good; trend firm; supply limited; orange pulp $43, lemon pulp $40@41, both unchanged.

Buffalo: Demand fair; trend steady; supply adequate; $32.50, sacked, f.o.b. Florida, unchanged.

Boston: Demand slow; trend about steady; supply adequate; $50, sacked, off 17¢.

Atlanta: Demand fair; trend steady; supply good; pulp $31.50@32.50, sacked; meal $27.50@30, sacked; both f.o.b. Florida processing plants, unchanged.

DRIED SKIM MILK

Boston: Demand and trend steady; supply steady; 13½¢ lb., unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked, unchanged.

Los Angeles: Demand slow; trend steady; supply adequate; 14¢ lb., less than ton lots, sacked; 13¾¢ lb., ton lots, sacked; both unchanged.

Buffalo: Demand fair; trend higher; supply light; spray $12.20 cwt., f.o.b. Buffalo, up 10¢.

Chicago: Demand good; trend steady; supply fair; $13@13.50 cwt., sacked.

Ft. Worth: Demand slow; trend steady; supply sufficient; $16.75 cwt., sacked, unchanged.

Minneapolis: Demand good; supplies still tight; price unchanged; $14.25 cwt.

DRIED WHEY

Kansas City: Demand good; trend steady; supply adequate; $5 cwt., sacked, unchanged.

Boston: Demand fair; trend steady; supply ample; $4.85 cwt., unchanged.

Los Angeles: Demand slow; trend steady; supply adequate; $5.10 cwt., carloads, sacked; $5.25 cwt., l.c.l., sacked; both unchanged.

Chicago: Demand fair; trend firm; supply adequate; $4.75 cwt., sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked, unchanged.

Ft. Worth: Demand fair; trend steady; supply adequate; standard $4.75, sacked, truck or rail, delivered Fort Worth, unchanged; small lots $5.50, f.o.b. warehouse, Ft. Worth, up 25¢.

Seattle: Demand steady; trend easy; supply good; $5.70 cwt., ex-warehouse, l.c.l., unchanged.

Denver: Demand slow; supply ample; $5.50 cwt., carload, unchanged.

Minneapolis: Supplies adequate to meet the demand; price steady at $4.75 cwt., f.o.b. shipping points.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand slow; trend steady; supply ample; $1 a unit of protein, sacked, unchanged.

Boston: Demand fair; trend firm; supply light; $95, unchanged.

Memphis: Demand fair; trend higher; supply tight; 85% meal $85, up $1.

Ft. Worth: Demand good, especially for export; trend steady to firm; light offerings; 85% protein $85, sacked, delivered Ft. Worth, unchanged.

Atlanta: Demand good; trend steady; supply short; $87.50, f.o.b. Alabama and Georgia production points, unchanged.

FISH MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $113.10, unchanged.

Boston: Demand good; trend firm; supply fair; Peruvian 65% $118, truckloads $120, both unchanged.

Buffalo: Demand light; trend firm; supply of imports only; 60% protein menhaden $133, f.o.b. Buffalo, unchanged.

Los Angeles: Demand fair; trend steady; supply adequate; local production 60% protein $1.80@1.82½ a unit, unchanged.

Chicago: Demand good; supplies very tight; menhaden, East Coast $118@120, Gulf $117@119; scrap, East Coast $114@116, Gulf $113@115; Canadian herring $1.70@1.80 a unit of protein.

Ft. Worth: Demand good; trend steady; offerings light for immediate; sacked: 65% protein Peruvian $118@119, unchanged.

Portland: Demand sluggish; trend weak to mostly lower; supply ample; $1.88 a protein unit, sacked.

Atlanta: Demand good; trend steady; supply limited; 65% Peruvian $112@113.50, sacked, Atlantic and Gulf ports, down 50¢; 60% menhaden $120, sacked, Atlantic ports, unchanged.

Seattle: Demand and supply fair; trend easy; Canadian production $1.85 a unit protein, f.o.b. truck Vancouver, sacked, unchanged.

Denver: Demand fair; supply short; $1.75 a protein unit, f.o.b. West Coast, down 20¢.

Minneapolis: Demand fair; supplies still tight, but improving; prices unchanged; Canadian herring $1.80 a unit for immediate, $1.75 for last half December or January, f.o.b. West Coast; 60% West Coast blended $138.

HOMINY FEED

Cincinnati: Demand fair; trend steady;

(Turn to QUOTES, page 33)

Major Markets Roundup

Soybean Meal, Millfeeds Sharply Higher

Sharp advances in the prices of soybean meal and wheat millfeeds were featured in the ingredient markets around the nation this week. Soybean meal was up as much as $5 in the Chicago market, and the run-up on millfeeds ranged from $2 to $5 around the nation.

All oilseed meals were higher in the average prices computed by the U.S. Department of Agriculture (see table). Those same figures, for the week ending Dec. 4, also show animal proteins to be off slightly; however, there was a late week tendency for these products to move higher in sympathy with the vegetable proteins.

Distillers dried grains moved up $3.25 in the government's figures. Corn was down $1.60, trade sources indicating this was due to Commodity Credit Corp. sales activity.

Alfalfa meal was steady to lower, due to the slow pace of the poultry feed lines.

East

BOSTON: The local millfeed market was generally higher with some of the advances rather sharp, despite an obvious slowdown in buying interest. Quotations appeared to be rising by virtue of asking prices rather than the customary reflection of active buying interest.

Sharply higher were distillers' grains, brewers' grains, linseed oil meal and reground oat feed, all attaining rises from $4 to $5. A soft spot was alfalfa meal which yielded about $1.50.

BUFFALO: Grains worked lower while some by-products shot up in a mixed ingredient market. Demand was generally slow on the rise, and some items were in tight supply. Some trade sources believe that when grains decline and other ingredients move up, some adjustments eventually will have to be made, and they look for a downturn in the market before the end of the year.

Soybean oil meal rebounded $4 on fairly good feed demand in the East. Linseed oil meal and cottonseed oil meal both gained $1. Meat scraps "turned around" and jumped $7.50. Brewers' grains rose $2.50 and distillers' grains advanced $3.

Millfeeds were in good demand, with bran stronger than middlings. Prices increased sharply, but there was some resistance to the rise. Bran climbed $3.50, middlings gained $3 and red dog was up $4.

Midwest

CINCINNATI: Supplies were adequate to meet the quiet demand for ingredients this week.

Distillers' dried grains advanced from $1 to $7. Brewers' dried grains and middlings were up $3, and soybean oil meal rose $2 to $3. Also advancing were linseed oil meal, from $1 to $2.50; bran, by $2, and cottonseed oil meal and hominy feed, by 50¢.

On the lower side were: Tankage, $1.50; fish meal 1¢, and molasses, ¼¢.

CHICAGO: Soybean meal is on the escalator once again — 44% unrestricted billing meal was up to $61 and 50% to $65. These prices represent advances of $4 to $5 for the week and have not been experienced since late October and early November.

Meal with eastern trunk line billing was strong with 44% selling at $57.50 and 50% at $62 for run-ups of about the same amounts as for the unrestricted.

MINNEAPOLIS-ST. PAUL: Soybean prices advanced $2.50 to $4 here during the week to be the feature of the ingredient market. Millfeed prices also moved higher, advancing $2 each on bran, middlings and red dog.

Meat and bone meal and tankage did a turnabout and advanced after long declines. Meat and bone meal prices ranged $4 to $5 higher and tankage was steady to $2 higher.

Oat products advanced as oats became somewhat hard to find. Sacked crimped oats was up $3 while sacked feeding rolled and sacked oat feed each advanced $1.

Linseed meal moved $1 to $2.50 higher.

ST. LOUIS: Strength developed in most feed ingredients, with soybean meal and millfeeds leading the way to higher prices. Buying interest was good in practically all feedstuffs.

Export demand for soybean meal was active, and it was reported that a good quantity had been booked for December-January shipment. Observers said that export buying always seems to have a greater bullish impact on the market than the same amount of buying by domestic users and this appeared to hold true again as soybean meal prices climbed $3.50 for the week. Feed manufacturer buying was fairly heavy as they have little backlog of supplies, having held purchases to nearby shipment for several months.

Millfeeds advanced sharply, bulk middlings moving up $5. Demand was good, reflecting the fact that prices were still attractive in relation to other feeds.

South

ATLANTA: Heavy export buying interest in the Mississippi valley cleaned out practically all of the December soybean meal, and heavy buying interest by domestic buyers of cottonseed meal has resulted in both of these proteins being in tight supply. Many mills report production has been sold through December. Occasional cars are offered by re-sellers at higher prices.

Ginner demand for cottonseed hulls is not quite as great, and several lots were offered this week at $2 to $3 per ton under offerings two weeks ago, with demand continuing on the slow side, as many cattlemen and dairymen are looking for cheaper roughages.

Most of the southeastern cattlemen and dairymen continue to increase their usage of concentrates.

Colder weather in the eastern and southeastern parts of the U.S. has caused the usage of citrus pulp to pick up.

MEMPHIS: A fair demand existed for ingredients on the Memphis market, with prices generally unchanged or higher.

Buyers of animal and poultry proteins still seemed to be interested only in their nearby requirements. Feather meal and poultry by-product meal were fairly scarce in this immediate territory, but even this did not seem to worry buyers.

Cottonseed oil meal, after showing some signs of easiness, firmed up with slightly better demand. Strength in nearby soybean oil meal probably was the most important factor, however, in pushing cottonseed oil meal up. Offerings for December were at a premium over January-March quotations. The trade considered the demand fair, mostly for December.

Soybean oil meal picked up some strength, especially for December shipment.

Millfeeds were stronger.

Influenced mainly by the cash market situation, unrestricted soybean oil meal made good gains on the Memphis Board of Trade, compared with one week earlier.

Trading volume picked up from recent weeks, with 6,400 tons of unrestricted soybean oil meal changing hands.

Unrestricted soybean oil meal closed Dec. 5 50¢ to $3.50 per ton higher than Nov. 28, while bulk solvent cottonseed oil meal remained unchanged. The biggest advance was posted for the nearby December contract.

Southwest

KANSAS CITY: The tempo of major ingredient sales picked up this week as inventories apparently ran low causing mixers and dealers to step in and cover their needs.

Millfeeds were sharply higher with all wheat offal products participating but middlings and shorts were the leaders advancing $3 to $4. Bran was up about $2.

Soybean meal was strong on active demand. Prices advanced about $3, and spot supplies were well cleaned up and the premium returned to spot shipment material again. Demand was triggered by some export buying coupled with mixers replenishing their stocks.

Meat scraps and tankage prices were slightly higher mostly in sympathy with strength in vegetable proteins. Prices of blackstrap molasses touched the low point of the season, causing better demand and some firming of prices.

FT. WORTH: The situation on cottonseed meal grew tighter this week. Old process was up $2 to $3, and offerings were hard to find. Mills were sold out of solvent meal for December-January and only quoting February-April delivery.

Posting a 50¢ to $1 advance was solvent rice bran.

West

SEATTLE: Canadian herring meal was unchanged at $1.85 a unit, f.o.b. Vancouver, B.C. No. 2 yellow corn was off about $1, the decline being attributed to competition from Commodity Credit Corp. milo.

Soybean meal spiralled upward about $3 per ton. Cottonseed meal was up $3.

PORTLAND: Feedstuffs prices at Portland and throughout Pacific Northwest continue to follow an irregular trend in front of moderately slow trading this week.

Quotations advanced for wheat millfeeds, oilseed meals, suncured alfalfa and whole barley. These gains more than offset lower values for whole corn, blackstrap molasses and fish meal.

Smaller soybean meal offerings were reflected by $2.50 to $3 a ton higher listing with cottonseed meal following this trend with $1 a ton higher quotes.

Wheat millfeed prices gained 50¢ a ton under the influence of continued tight offerings by regional mills. Buying interest on the other hand was limited to one or two carload sales to smaller users or to other buyers on a fill-in basis.

QUOTES

(Continued from page 82)

supply adequate; $48, up 50¢.

Los Angeles: Demand good; trend firm; supply limited; hominy meal $52, hominy pellets $54, both unchanged.

Kansas City: Demand fair; trend steady; supply adequate; yellow hominy $38.50@39, up 50¢.

St. Louis: Demand good; trend steady; supply adequate; yellow $42, down $1.50.

Buffalo: Demand fair; trend steady; supply fair to poor; $55.60, Boston, unchanged.

Memphis: Demand poor; trend weak; supply ample; white $45.80, yellow $45.80, both unchanged.

Chicago: Demand good; trend $1 up; supply fair; $46.

Boston: Demand cautious; trend firm; supply light; $54, up $2.

LINSEED OIL MEAL

Buffalo: Demand fair; trend higher; supply fair to poor; $60, Minneapolis, up $1.

Los Angeles: Demand slow; trend steady; supply adequate; local production, 31% protein $71, unchanged.

Chicago: Demand good; trend of solvent up $1.50@2, expeller firm; supply moderate; solvent $60@60.50, expeller $62.50, both Minneapolis basis.

Cincinnati: Demand poor; trend higher; supply adequate; new process $60.50, up $2.50; old process $63.50, up $1, Minneapolis.

Boston: Demand slow; trend strong; supply adequate; 32% $80.20, up $6.

Ft. Worth: Demand slow; trend steady; supply sufficient; 34% protein, extracted $72.40, December, unchanged.

Feeds: Average Bulk Prices and Index of Weighted Prices*

(Dollars per ton)

	Dec. 4, 1961	Nov. 28, 1961	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	68.20	66.45	+1.75
Cottonseed meal	65.90	65.55	+ .35
Linseed meal	67.70	66.35	+1.35
Copra cake or meal	59.50	58.75	+ .75
Peanut meal	64.00	63.00	+1.00
Index	87.8	86.1	+1.7
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	77.30	77.40	— .10
Tankage	86.00	87.00	—1.00
Fish meal	113.90	113.90	...
Index	75.2	75.4	— .2
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	48.45	48.45	...
Dist. dried grains	53.80	50.55	+3.25
Brewers dried grains	47.85	47.20	+ .65
Index	76.6	75.5	+1.1
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	44.80	43.25	+1.55
Midds. and shorts	45.35	43.45	+1.90
Index	81.4	78.4	+3.0
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	47.70	48.40	— .70
Rice bran	33.00	33.00	...
Index	72.8	73.7	— .9
ALFALFA MEAL			
Prices at prin. mkts.	49.55	49.60	— .05
Index	95.4	95.5	— .1
MOLASSES, FEEDING			
Prices at prin. mkts.	25.65	26.27	— .62
Index	76.3	78.2	—1.9
ALL FEEDSTUFFS			
Index	82.7	81.3	+1.4
FEED GRAINS			
Prices at prin. mkts.:			
Corn	38.10	39.70	—1.60
Oats	46.00	46.00	...
Barley	48.30	47.50	+ .80
Grain sorghums	38.40	38.40	...
Index	63.3	65.3	—2.0

*Base period of index is 1947-49.
Source: USDA.

Portland: Demand fairly active; trend steady and unchanged; supply adequate; 34% solvent $88.60, sacked.

Seattle: Demand fair; trend steady; supply ample; Canadian production, 31% protein $90, delivered carloads, sacked, unchanged.

Denver: Demand fair; supply ample; $75, up $2.50.

Minneapolis: Demand good; supplies scarce; 34% solvent up $2.50 to $62; 32% expeller up $1 to $63.

MEAT AND BONE MEAL

Cincinnati: Demand good; trend stronger; supply short; 50% meat and bone scraps $73.50, Cincinnati, unchanged.

Memphis: Demand as needed; trend slightly better; supply adequate; 50% protein $77, without billing, nominal, up 50¢; 50% protein $79, with rail transit, nominal, up $1.50.

St. Louis: Demand good; trend firm; supply limited; 50% protein $77.50, unchanged.

Buffalo: Demand good; trend strong; supply scarce; 50% meat scraps $82.50, f.o.b. Buffalo, up $7.50.

Los Angeles: Demand fair; trend easier; supply moderate; 50% protein $1.70 a unit, down 5¢.

Chicago: Demand improved; trend up $2.50; supply fair; 50% protein $85, sacked.

Kansas City: Demand good; trend steady; supply adequate; 50% meat scraps $77.50, unchanged.

Boston: Demand good; trend steady to firm; supply adequate; $1.15 a protein unit, up 5¢; converted 50% $79.50, up $2.50.

Ft. Worth: Demand good; trend firm; supply sufficient; meat and bone $75 bulk, $77.50 sacked, f.o.b. Ft. Worth, unchanged to $2.50 up.

Seattle: Demand good; trend steady; supply ample; $1.65 a unit protein, ex-processing plant, sacked, unchanged.

Portland: Demand slow; trend easier; supply adequate; 50% $77.50, sacked.

Denver: Demand fair; supply ample; $72.50, up $2.50.

St. Paul: Demand good; supplies ample; price range $4@5 higher; $83@87.

MEXICAN PHOSPHATE

Brownsville, Texas: Mexican natural ground rock; 13% phosphorus $39 sacked, bulk $2 less.

Enzymes that work are here now!

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See page 15

MILLFEED

Cincinnati: Demand poor; trend higher; supply adequate; bran $49, up $2; middlings $49, up $3.

Memphis: Demand fair; trend firm; supply ample; wheat bran $46.50, up $3.50; gray shorts $47.50, up $4.50; standard midds. $47.50, up $3.50.

Boston: Demand fair; trend firm; supply adequate; bran $54.60, up $3; middlings $54.60, up $3.

Buffalo: Demand fair to good; trend higher; supply fair to adequate; bran $46.50, up $3.50; middlings $46.50, up $3; red dog $49.50, up $4; all prices f.o.b. Buffalo.

St. Louis: Demand good; trend firm; supply scarce; sacked bran $47.50, up $2.50; sacked shorts $47.50, up $4.50; bulk bran $44, up $4; bulk middlings $45, up $5.

Los Angeles: Standard millrun $47.50, demand good, firmer trend, smaller offerings, up $1; red bran $54@55.50, demand slow, firmer trend, ample supplies, up $1.50@2.

Chicago: Demand very good; trend much stronger, up $2.50@3; supply moderate; standard bran $45; standard millrun $46; red dog $48.

Kansas City: Demand good; trend strong; supply adequate; sacked bran $42.50@43, up $2; sacked shorts $42.50@43, up $4; bulk bran $39@39.50, up $3; bulk shorts $40.50@41, up $3; bulk middlings $40@40.50, up $3.50.

Ft. Worth: Demand good; trend strong; offerings extremely light for immediate; bran, bulk $47.50, burlaps $51; gray shorts, bulk $49.50, burlaps $51; middlings, bulk $49.50, delivered Texas common points; bran up $3@3.50, bulk shorts up $4@4.50, sacked shorts up $3@3.50, middlings up $4.50@5.

Portland: Demand good; trend strong; supply ample; $39.75, sacked.

Seattle: Demand good; trend firm; supply fair; $40, delivered, common transit points, carlots, unchanged.

Denver: Demand good; trend steady; supply ample; shorts $46.25, up $4; bran $46.25, up $2; millrun $46.25, up $3.

Minneapolis: Demand good; supplies tight; sacked bran up $2 to $44; sacked middlings up $2 to $45; sacked red dog up $2 to $46.

MOLASSES

Atlanta: Demand fair; trend steady; supply limited; citrus $20, f.o.b. Florida processing plants, unchanged.

Seattle: Demand and supply fair; trend easy; $23.75, f.o.b. Seattle, tank truck lots, down $2.

Boston: Demand seasonal; trend stable; supply plentiful; 16½¢ gal., tank cars, unchanged.

Memphis: Demand fair; trend steady; supply ample; blackstrap 12¼¢ gal., tank car, f.o.b. New Orleans, unchanged; $27.17, delivered Memphis, truck, unchanged.

Kansas City: Demand good; trend steady to stronger; supply ample; 12@12¼¢ gal., New Orleans, unchanged.

Buffalo: Demand fair to good; trend steady; supply adequate; 16½¢ gal., f.o.b. Albany, unchanged.

Los Angeles: Demand good; trend easier; supply ample; $23.50, f.o.b. tank cars, down $1; $23.75, f.o.b. tank trucks, down $1.

St. Louis: Demand slow; trend easy; supply ample; blackstrap 12¢ gal., tank cars, New Orleans, down ¼¢.

Cincinnati: Demand fair; trend steady; supply adequate; 12½¢ gal., New Orleans, down ¼¢.

Ft. Worth: Demand fair; trend steady; supply sufficient; blackstrap 13¼¢ gal., f.o.b. Houston; truck $29.36, delivered Ft. Worth, seller's market price on date of shipment, unchanged.

Denver: Demand fair; supply ample; $31.70, tank car, down $1.

Minneapolis: Demand good; supplies adequate; prices unchanged; $33 for blackstrap, tank truck, delivered Twin Cities; $32 for blend.

OAT PRODUCTS

Seattle: Demand and supply fair; trend steady; 38 lb. or better $50, delivered truck lots, unchanged.

Buffalo: Demand fair; trend higher; supply fair to poor; $33.60, sacked, Boston, up $3.

St. Louis: Demand good; trend firm; supply scarce; white pulverized $43, unchanged; reground oat feed $22, up 50¢.

Chicago: Demand good; trend, reground up $2.50@3, other steady; supply fair; reground oat feed $19.50@20; No. 1 fine ground feeding oatmeal $73; feeding rolled oats $76@79.

Kansas City: Demand fair; trend steady; supply adequate; oat mill by-product $24@25, sacked, up $1; feeding rolled oats $74@75, sacked, unchanged.

Boston: Demand spotty; trend firm; supply adequate; white pulverized $54.60, sacked, unchanged; reground oat feed $33.50, sacked, up $5.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $45@47, unchanged.

Ft. Worth: Demand fair; trend firm; very light offerings; 10% protein oat millfeed $44.30, sacked, up $1; reground $31.80, sacked, up 50¢.

Minneapolis: Demand fair; supplies adequate; sacked feeding rolled up $1 to $83; sacked feeding oatmeal steady at $68; sacked crimped up $3 to $65; sacked pulverized steady at $46.50; sacked oat feed up $1 to $26.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% solvent $64, f.o.b. Alabama producing mills, unchanged.

Los Angeles: Nothing available for quotation.

POULTRY BY-PRODUCTS

Atlanta: Demand good; trend stronger; supply limited; meat meal $77.50, f.o.b. Alabama and Georgia production points, up $1.50.

Los Angeles: Demand slow; trend weaker; supply ample; $1.50 a unit of protein, sacked, down 5¢.

Boston: Demand and supply in balance; trend firm; $85, unchanged.

Memphis: Demand fair; trend slightly higher; supply tight; 55% meal $86, sacked, nominal, up 50¢.

Ft. Worth: Demand good; supply very scarce; $82.50@85, sacked, f.o.b. Texas plants, up $2.50.

RICE BY-PRODUCTS

Atlanta: Demand fair; trend stronger; supply limited; bran $49, sacked, delivered, up $2.

Buffalo: Demand good; trend steady; supply fair; $56, sacked, f.o.b. Buffalo, unchanged.

Los Angeles: Demand slow; trend steady; supply limited; California production, high fat content, bran $53, sacked, unchanged.

Ft. Worth: Demand good; trend steady; extremely light offerings standard rice bran, sufficient on solvent; standard rice bran $37, sacked, f.o.b. Houston; solvent rice bran $31.50 bulk, $35.50 sacked, f.o.b. south Texas rice mills, up $1.

SCREENINGS

Buffalo: Demand fair; trend steady; supply fair to poor; ground $39.50, sacked, unchanged; unground $29.50, bulk, unchanged, New York.

Los Angeles: Demand slow; trend steady; supply adequate; ground barley $35, sacked, unchanged.

Chicago: Demand good; trend firm; supply fair; ground grain $30.50, Canadian $24.50.

Cincinnati: Demand good; trend steady; supply tight; unground grain screenings $22@25, unchanged.

Minneapolis: Demand good; supplies tight on Canadian; prices steady; unground Canadian $21; domestic lights $3@10; domestic mediums $12@20; domestic heavies $20@28; 15% flax screenings $40.

SOFT PHOSPHATE

(Sacked, delivered)

Atlanta: $20.25.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $25.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.33.

SOYBEAN OIL MEAL

Portland: Demand good; trend firm to strong; supply adequate; 44% $80.60, 50% $86.60.

Atlanta: Demand good; trend steady; supply tight; 44% $69.10, delivered, up $2.

Seattle: Demand fair; trend easy; supply ample; $82, delivered, carlots, up $3.

St. Louis: Demand good; trend firm; supply ample; 44% $60, Decatur basis, up $3.50.

Buffalo: Demand and supply fair; trend higher; $57.50, Decatur, up $4.

Los Angeles: Demand slow; trend much firmer; supply ample; $81.60@82.10, up $3@3.50.

Cincinnati: Demand fair; trend higher; supply adequate; $59@60, Decatur, up $2@3.

Boston: Demand cautious; trend erratic; supply ample; 44% $57, up $2.50@3; 50% $63, up $2.

Memphis: Demand fair; trend steady; supply ample; prime 44% solvent $61, f.o.b. Memphis, up $2.

Chicago: Demand very brisk; trend $4@5 up on 44%, $3.50@5 on 50%; supply fair; Decatur basis, 44% protein, unrestricted billing $61, E.T.L. $57.50; 50% protein, unrestricted $65, E.T.L. $62.

Kansas City: Demand fair; trend stronger; supply adequate; 44% solvent $58@58.50, up $2.50.

Ft. Worth: Demand fair; trend firmer; supply sufficient; 44% $68@70, December-January, up about $2; 50% $74@76, December-January, up about $1.

Denver: Demand good; supply ample; $69.20, up $3.

Minneapolis: Demand good; supplies adequate; 44% up $4 to $55.50; 50% up $2.50 to $61.50; 41% expeller up $3 to $61.50.

TANKAGE

Cincinnati: Demand fair; trend steady; supply ample; 60% digester $83.50, Cincinnati, down $1.50.

St. Paul: Demand good; supplies fair; price range steady to $2 higher; $89@94.

Kansas City: Demand good; trend steady to strong; supply tight; 60% digester $87.50@90, up $2.50.

Ft. Worth: Demand good; trend firm; supply scarce; 60% digester $90, sacked, f.o.b. Ft. Worth, up $2.50.

Chicago: Demand good; trend steady; supply fair; 60% protein $90, sacked.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $105 bagged, $99 bulk, delivered in all states east of and including New Mexico, Colorado, Wyoming and Montana.

LaPlatte, Neb., and South Point, Ohio: Minimum 42% nitrogen, 262% protein equivalent $96, f.o.b. bagged; $90 bulk, cars or trucks; freight equalized with nearest producing point.

Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent, $95 bagged, $91 bulk, f.o.b. Pryor, freight equalized with nearest producing point; $100 bagged, $96 bulk, delivered in cars or trucks to New Mexico, Colorado, Wyoming and all states to the East.

VEGETABLE & ANIMAL FAT (HYDROLYZED)

Los Angeles: Demand fair; trend firm; supply adequate; 5½¢ lb., up ¼¢.

Ft. Worth: Demand good; trend firmer; supply sufficient; 4¾¢ lb., f.o.b. north central Texas, up ½¢.

CLINIC

(Continued from page 1)

Carthage, Mo., a member of the U.S. Turkey Advisory Committee, substituting for Dr. Ralph, and Dr. Jerry West, assistant professor of agricultural economics, University of Missouri.

In his introduction, Mr. Turnbull pointed out that:

1. Marketing orders are not production controls. They are aimed at controlling what is marketed, not what is produced.

2. Marketing orders are mandatory and they apply to everyone . . . the big and the little.

3. The turkey marketing orders that are proposed had to be written under the 1937 Agricultural Marketing Agreement Act which was designed for the fruit and vegetable producers.

4. It will take new legislation to permit marketing orders for broilers and eggs, but steps are being taken now to provide for such legislation on broilers, a broiler advisory committee having met in Washington Dec. 4. Mr. Turnbull said he had heard a report that the committee voted 20 to 10 in favor of taking the necessary steps to get marketing orders for the broiler industry.

5. In the referendum on turkey marketing orders, only those who produce hatching eggs will be permitted to vote on the orders affecting that level of the industry. On the order for slaughter turkeys, only the producer of turkeys for market will be permitted to vote. In this connection, Mr. Morrow said that it would be possible for the industry to vote orders on one without the other, and he termed this situation the weakest point in the proposed turkey marketing orders.

Proposed Orders Described

Mr. Turnbull described the various proposed orders:

1. Hatcheries would be required to cut back a certain percentage on the number of eggs hatched (decided by supervisory board) below their base established from historical production.

2. A base would be established for each hatchery the same as in No. 1, but the percentage of reduction would be referred to the producers of hatching eggs selling to the hatchery so that any one producer of eggs could be assured of selling only a certain percentage of his production.

3. Hatcheryman can go ahead and set all the eggs he wants in a season until the board decides that a cutback is in order, whereupon the hatcheryman must destroy a certain percentage of the eggs he receives.

At the processor level, there would be established the number of birds needed to satisfy the market at a satisfactory price. If an excess were coming to market, each processor would be required to set-aside a certain percentage for a "pool" under the administration of the supervisory board. These birds would then be held until the board could move them through non-competitive channels, such as school lunch programs, export markets or others. Producer would not realize any income from these birds until the "pool" is liquidated, and then he would get a proportional share. A "pool" can exist for only 12 months, but there can be a "pool" for each month.

Referendum in February?

In speaking about the progress that is being made with marketing orders for turkeys, Mr. Turnbull said that he expects the referendum to be held in February. A two-thirds majority is necessary to put them into effect. Once the orders are approved, 57 members of the Supervisory Board will be nominated, a set number from each state. The Secretary of Agriculture has the power to veto any nominees, and name three members himself. The actual operations of the board will be handled by a 19-man executive committee, Mr. Turnbull said, selected from the board.

Mr. Morrow said he opposed the No. 2 "referral" marketing order because it would tend to freeze production in areas where they cannot raise turkeys as efficiently as in other areas.

Questions and Answers

In answer to a question on who votes in the referendum if there is a mortgage on the birds, Mr. Morrow said that if the loan is through a regular commercial lending agency where the loan does not contain any clause that ties its income to the profit from the birds, the producer alone votes. If there is a profit clause in the paper, the producer and the lender would each have a half vote.

Questions and answers during the discussion included these:

"What will keep the rich from getting richer and the poor from getting poorer under marketing orders?" Dr. West: "I feel there is little reason to believe that orders will favor the big producer over the small producer, or vice versa. The most efficient producer will be one who will do the best."

"Why have marketing orders in the poultry industry instead of some other form of control, like on the basic commodities?" Dr. West: "There is no legislation that would permit other controls. Also, there is some question that there will be any kind of farm programs in the years ahead so that a self-help marketing order program might be the only kind that will be possible."

"Is there anything in the marketing orders to prevent me from growing my birds 10% heavier?" Mr. Morrow: "No. But because of the cost of that additional gain, I don't think it would be economically wise."

"If a producer loses half of his poults from disease, will this be taken into consideration when he brings his birds to the processor and is faced with a percentage that must go into a pool?" Mr. Morrow: "This question hasn't been raised before, but I don't think so."

"If turkeys and broilers go under marketing orders, do you think that eggs will?" Several hatcherymen answered this: "Yes. At least they will have to be seriously considered since there will likely to be a diversion to egg production by broiler or turkey operators who are forced to cut back."

"What is to prevent the producers from pushing the prices sky-high with the marketing controls?" Dr. West: "If the price goes above the parity price, the marketing order is no longer in effect. USDA is now trying to figure out what a parity price would be on turkeys or broilers."

Dr. West also pointed out that a marketing order will only be effective if the industry really wants to make it work.

In support of marketing orders, Mr. Morrow said: "With marketing orders we will give up the 15¢ prices

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GETKIN-MOYER, INC.
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MANEY BROS.
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Minneapolis, Minnesota
Distributors in the Upper Midwest States for
SMALL'S DEHYDRATED ALFALFA MEAL

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and the right to go broke, but we will also give up 30¢ prices and the right to get rich."

Prior to the clinic, Dr. West reviewed farm programs through the years. He said that the decades of the 1920's, the 1930's and the 1950's have been similar in that consumption has not kept pace with production. He cited the various laws that had been passed during those periods. "None of these programs has completely accomplished its objectives."

The Missouri professor stressed the fact that it is difficult to get universal agreement on any of these programs since each of us has his own values and all the facts are not obtained by all people. He said that by getting at all the facts, we will make certain that our disagreements are on values, not on facts.

INTEGRATION

(Continued from page 1)

terms this means that we will control all stages of certain quality poultry operations, from ownership of the breeders and the hatchery, and management of the production facilities, right through to the final processing and marketing of the eggs and poultry meat.

"During this past fiscal year we have acquired such control of the Keithley and McPherrin turkey operations in California. Since Oct. 1, and as we go to press with this annual report, announcement has been made of the acquisition of three additional companies: The Fort Halifax Co. in Waterville, Maine; Smith's Pride, Inc., of Trussville, Ala., and the Colonial Poultry Co. of Albertville, Ala.

"We believe that all of these moves are in the best interests of Purina, of our new associates, of American agriculture, and of the consuming public."

Trade reports have indicated that a number of additional acquisitions of poultry production and processing operations are expected to be made by Purina. However, to date, official announcement has been made only on the above listed firms.

One of the expected acquisitions which has been mentioned for some time is a large integrated egg production (including feed milling) and processing business in Mississippi. However, there has as yet been no official confirmation of the reportedly anticipated transaction.

PURINA

(Continued from page 8)

vent plants. "As usual," Purina said, "this division contributed its fair share to the profits of the company this past year."

Grain Merchandising: Activities of this division were described as "important to our Purina buying organization, helping us buy and distribute all the high quality grains needed. We have active merchandising offices in St. Louis, Kansas City, Minneapolis and Chicago located in the grain terminals, and operate three large elevators in Kansas City and St. Louis."

Purina Dog Chow: This product, handled by the Ralston division, during the past year maintained its position of top selling dog food, dry or canned, the report said. "Dog Chow actually increased its share of a growing dry dog food market in spite of greatly stepped up competition from new brands and increased advertising and promotion by all competitive brands," Purina said. The product was introduced in Canada during the past year as a result of "phenomenal acceptance" in the U.S.

Ralston Cereals: The cereal line showed an all-time high sales volume, and the cereals were successfully introduced in Canada the past year. Production facilities have been increased, including a doubling of facilities for producing dog food and other pet foods.

In connection with the financial report, it was pointed out that during 1961, the company changed its accounting practice to include: (1) In the consolidated financial statements the accounts of all majority-owned subsidiaries of the international division, and (2) in consolidated earnings the company's share of the net earnings of unconsolidated 50%-owned companies. For comparative purposes, the financial statements for 1960 were restated on the revised basis. The effect of these changes was to increase earnings $1,197,818 in 1961 and $914,949 in 1960.

HEARING

(Continued from page 1)

As he had done at previous hearings, Francis A. Kelly, Warsaw, N.Y., counsel for the National Farmers Union, presented proponent witnesses. His tactics during the Oklahoma City session were changed from the first session in Richmond, Va., when he presented a large number of witnesses favoring the orders. In Oklahoma City he concentrated on witnesses with facts and suggestions for changes in the proposed orders.

Presenting witnesses opposing the marketing orders was Dr. A. William Jasper, American Farm Bureau economist. Charles Huddleston, Oklahoma Farm Bureau attorney, also acted as counsel for opponents.

Represented at the hearing session were state turkey federations from Arkansas, Colorado, Kansas, Texas and Oklahoma, in addition to other organizations and individuals.

For and Against

Lex Killebrew, executive secretary of the Arkansas Turkey Federation, Little Rock, made a statement in opposition to the marketing orders. He claimed the federal order would increase costs 3¢ lb. to producers, further handicapping growers and adding to their losses. "If turkey production is limited, and the price goes up," he said, "we'll still be in trouble because consumers will just buy other meats."

George Keck, Jr., Fairview, Okla., president of the Oklahoma Turkey Federation, presented testimony twice. He spoke once as an individual grower favoring the proposed market orders. He then presented a statement by the Oklahoma Turkey Federation opposing the orders.

Mr. Keck said he would favor marketing orders for turkeys even if 1961 had been a profitable year, which it wasn't for him. He said he favored the orders as written both for hatching eggs and for market turkeys.

In the statement made for the Oklahoma Turkey Federation, he said the proposed order would give too much power to the secretary of agriculture and it would be impossible to administer equitably.

In Same Position

R. E. Janes, Austin, Texas, turkey breeder, hatcheryman and grower, was in much the same position as Mr. Keck. He was a member of the National Turkey Advisory Committee that drafted the proposed orders, but represented the Texas delegation that opposed the orders.

After presenting the Texas statement opposing the proposed orders, Mr. Janes offered some suggested changes he said were needed if orders are enacted. Foundation breeding flock owners need to be able to operate without too much control, he said, to assure continued improvement of turkey quality. He also said turkey producers should be allowed to choose a 5-year period as their allotment base in place of using 1961.

Before Hearing

A few weeks before the Oklahoma City hearing sessions, area meetings were held by Texas turkey growers and other industry people in six cities across the state. According to Texans present at the hearing, each area group voted to oppose the orders. Later a meeting of representatives from each of these areas met and decided to oppose the orders. Finally, Mr. Janes was appointed to head a committee of six to draft the resolution opposing the order and deliver it to the hearing.

Many of the delegates to the statewide meeting came to Oklahoma City to add emphasis to their position. Homer Fikes, Fredericksburg, testified the orders would discriminate against the small turkey grower. He said his neighbors in the hill country of Texas had paid his expenses to the Oklahoma City hearings to state their position against orders in any form.

Minister Testifies

One of the most colorful witnesses during the hearings was David Miller, bearded Mennonite minister from Custer County, Oklahoma. He said he grows a few turkeys each year and opposes orders. He said he had read the proposed orders and found the document contains 13,892 words. He said he didn't find the words "turkey grower" even one time, but he found the words "secretary of agriculture" 181 times, usually referring to the secretary's final authority.

Raymond Thompson, Ellsworth, Iowa, hatchery operator, representing the Iowa Turkey Federation, presented testimony favoring marketing orders, but with several amendments. He was questioned for a longer time than any other witness during the three-day session. Proposed changes advocated by Mr. Thompson included a fiscal year from Feb. 1 to Jan. 31 and allotments for turkey growers.

Mr. Thompson said allotments should be imposed on growers to make the orders workable. He also advocated a surplus pool of turkey of about 250 million pounds to assure a continuous supply for the market.

In his testimony, Mr. Thompson said turkey growers should be subject to allotment controls under the orders unless they produce less than 4,000 lb. of turkeys a year.

"Dumped in the Ocean"

Asked what would be done with turkey meat in excess of the allowed pool of 250 million pounds, Mr. Thompson said it could be "dumped in the ocean, or disposed of in any other way the committee could think of."

Jiggs Botchlet, Cordell, Okla., turkey grower and hatcheryman, testified in favor of the marketing orders. "There are federal grain supports and guarantees for labor," Mr. Botchlet said. "The commerce commission helps freight and fuel. The turkey industry could use some help, too."

Mr. Botchlet is Oklahoma's director in the National Turkey Federation and former president of his state's federation. However, his testimony was as an individual, not representing any group. He questioned whether the official position of the Oklahoma Turkey Federation against the orders was the true feeling of the membership. "Only 14 of 83 eligible voters were present when the vote was taken," he said. "Seven voted against the orders, four favored them and three abstained from voting."

From Colorado

Paul Barnhoff, president of the Colorado Turkey Federation, told the hearing his state was a "disaster area" as far as the turkey industry was concerned. He said he knew of two growers who quit the business this year. A poll of federation members had been taken and those answering the mail questionnaire favored the orders, Mr. Barnhoff said.

A Dallas feed man spoke at the hearing in opposition to the marketing orders, saying the industry can and should solve its own problems. Monroe May, vice president of the Texas Grain & Feed Assn., said if the marketing order is put into effect, "Other marketing orders will be passed for red meat, broilers and eggs. The net result would be a reduction in the consumption of turkey."

Joe Morrow, Carthage, Mo., said he favored marketing orders for turkeys and hatching eggs, but asked for some changes in the proposed regulations. He said a set-aside plan should be put in the hatching egg order to cut down the number of eggs. He suggested that a certain percentage of eggs ordered by hatcherymen to be hatched, be set aside and broken.

Nebraskan Speaks

Charles R. James, vice president of the Falls City (Neb.) Creamery Co., testified against the turkey marketing orders. He said his company's only business is turkey processing. If the proposed assessment on dressed turkey were imposed it would cost his company $16,000 a year and put them out of business.

Mr. James said few small plants such as his could handle the set-aside turkey as called for under provisions of the marketing order. He said the orders would not limit production and benefit the grower. Under the order's provisions, he said, the grower has no assurance of an allotment. "If we need controls in the turkey industry," he said, "let's have a rigid nationwide government program instead of this haphazard market order proposed."

Voicing a plea for self-determination, Roy Ferguson II, Shawnee, Okla., spoke in opposition to the orders. He claimed they would handicap efforts to produce quality turkeys. Mr. Ferguson is a breeder, hatchery operator, grower and processor.

Floyd Gingerich, Keenesburg, Colo., testified in support of the market orders, but called some parts of the proposals very confusing. He said turkey growers should be allowed to vote each three years on whether the orders should be continued or if changes should be made.

Tom Wilson, Boulder, Colo., said he had lost $8,000 on 18,000 turkeys this year and favored establishment of marketing orders with some changes. He said a historical base should be established for each grower so that allotments for growing turkeys would be fair. He favored allotments for growers rather than controls on hatching eggs and dressed turkeys as the proposal now reads.

Spectator

An interested spectator at the Oklahoma City session of the turkey marketing order hearings was Carl Stout, Richland, Mo., president of the National Turkey Federation. He did not offer testimony but said he planned to at the Chicago sessions of the hearing Dec. 8-9.

Mr. Stout said many of the changes proposed during the hearing would not be acceptable to the National Turkey Federation. "We are opposed to any controls at the grower level," he said.

The national federation, Mr. Stout pointed out, has been attempting for six years to get legislation passed that would permit turkey marketing orders. The proposal was for an assessment on breeder hens that would keep numbers down and at the same time provide money for promotion and research.

Mr. Stout expressed confidence that turkey marketing orders will be in effect for the 1962 turkey growing season. "No matter how much people talk against orders," he said, "they'll vote for them when they get the chance."

ANIMAL PRODUCTION

(Continued from page 6)

tetany in pigs fed this level. The source of dietary carbohydrate (lactose vs. glucose) did not affect the deficiency symptoms nor influence the calcium requirements. As was indicated earlier, a level of 0.2% calcium was adequate for maximum rate and

efficiency of gain. However, the ash content of the femur increased with all increments of calcium up to 2.0% of the diet.

COPPER AND MANGANESE—A level of supplemental copper of 250 ppm improved the rate of gain of pigs in research reported by Bunch (Iowa). Three feeding trials were conducted in which the effect of supplemental copper was compared with that of chlortetracycline. The results showed copper to be as effective as the antibiotic in increasing the rate of gain from 1.38 lb. per day for the control group to 1.47 lb. per day for the copper or antibiotic supplemented groups.

Comment—The story of copper in swine nutrition is quite perplexing. Growth rate stimulation has been obtained by copper supplementation under certain conditions. Also, copper has given protection against the growth-depressing effect of high calcium. However, under certain feeding conditions supplemental copper has appeared to be toxic.

The results of research reported by Liebholz (Iowa) showed no value for supplemental manganese to a semi-purified diet for pigs, when measured in terms of growth rate or efficiency of feed utilization. Manganese levels as low as 0.35 ppm and as high as 4,000 ppm manganese, in the inorganic salt, were compared. Increased levels of deposited manganese were found only in liver, bone and hair, but not in the kidney, spleen, loin, bone ash, bone fat or hemoglobin.

ENERGY AND PROTEIN—Apparently swine nutritionists must once again look over the fence at the work already conducted by their fellow nutritionists in the poultry field. Although the importance of the energy-protein relationship may not be quite as clear-cut for swine as for poultry, yet there is enough evidence to indicate we must pay more heed to this matter in formulating swine rations.

Clark (Iowa) presented data indicating the proper balance of protein and energy must be maintained in rations for growing swine or else a much lardier carcass will be the result. In this study, increasing the productive energy of the ration by 23% (950 to 1,170 Calories per pound) resulted in more backfat, less percent lean cuts and increased intramuscular fat. Increasing the percent of protein in the ration from 13 to 19 to 25% significantly decreased backfat and increased the percent of lean cuts. Two additional trials were reported in which the energy was increased to as high as 1,730 Calories per pound. In the factorial design, protein levels were studied at various levels for any interaction. Results of the second and third trial showed parallel results of increased body fat from increased levels of energy and decreased body fat from increased levels of protein in the ration.

Somewhat similar results were reported by Nickelson (Illinois) for pigs fed various combinations of energy and protein between 100 and 200 lb. Widening the Calorie to protein ratio by adding 15% lard without increasing the protein resulted in poorer carcasses. Narrowing the ratio by increasing protein level from 12 to 18% of the diet in the presence or absence of 15% added lard produced an improvement in carcass merit, particularly as measured by specific gravity and backfat thickness. Feeding at 70% of full feed produced a statistically significant improvement in carcass quality. Diets containing no more than 125 metabolizable energy Calories percent of protein produced most satisfactory carcasses. Poley (South Dakota) presented data from two experiments in which various levels of added fat and of protein for swine were studied. The addition of 4 or 8% fat to a corn ration increased rate of gain slightly. No effect from adding fat to a 40% oats ration was recorded in the first trial. In the second trial either 13.3 or 15.3% of protein was compared with 0, 4 or 8% added fat. Pigs fed the higher protein gained faster than those fed the lower protein, also pigs fed the higher protein had less backfat and those fed 8% fat had more backfat.

The favorable effect of pelleting relatively high fiber rations for swine was quite apparent in the report of Dinusson (North Dakota). Hulled oats were used as the base grain and oat hulls were used to vary the fiber content. Pellet rations were significantly better than the meal as measured by daily gain and feed efficiency. Increasing fiber—as oat hulls—from 2.9% to 16% did not significantly affect rate of gain on pelleted rations. Pigs ate on an energy basis, not on pounds of feed. With pelleted rations, with each increase in level of fiber they increased intake to attempt an equal daily energy intake.

Comment—It appears that level of energy in the ration largely affects the amount of feed a pig will consume as long as there are no toxic considerations. If you build up the energy content with fats, consumption will be less. If you dilute the energy with undigestible fiber, consumption will be greater. On the higher energy rations the pig will pile more fat on its back and put more within the lean tissues. Level of protein is quite important in the matter of its effect on carcass quality in that higher levels give some protection against the undesirable effects of higher levels of fat in the ration.

ADDITIVES—Researchers are on constant lookout for new additives and for new combinations of known additives for swine. The group of additives known as antibiotics has proven to be a very fertile field for investigation for the past 13 years. Therefore, the subject of antibiotics, and related substances, came in for a full session of discussion.

One of the newer antibiotics to be tested for swine, spiramycin, was investigated by Hoefer (Michigan). Four trials were conducted to study levels of spiramycin as well as combinations of spiramycin with either chlortetracycline or oxytetracycline. Although the results were not too consistent, a level of from 15 to 20 gm. of spiramycin per ton of ration appeared to stimulate rate of gain. In one trial, a combination of spiramycin and either chlortetracycline or oxytetracycline gave growth boosts.

Another of the newer antibiotics, tylosin, was investigated by Jordan (Eli Lilly). In this research, the levels of tylosin were adjusted three times, based on liveweight of the pigs —from weaning to 40 lb.; from 40 lb. to 100 lb., and from 100 lb. to 200 lb. A penicillin-streptomycin combination was used as a positive control and all treatments were compared against a negative control which received no antibiotic treatment. Levels of tylosin tested were 80-40-20 gm. per ton of ration, respectively for the three weight increments (weaning to 40 lb.; 40 lb. to 100 lb.; 100 lb. to 200 lb.); 40-20-10, and 20-10-5. A three to one mixture of penicillin-streptomycin was fed at levels of 40-20-10 gm. per ton. All levels of both the antibiotics tested showed significant increases in gain from weaning to 40 lb. However, from weaning to 200 lb., the optimum level of tylosin appeared to be 40-20-10 gm. per ton of feed where a statistically significant increase in gain of 10% was shown.

A whole array of levels of thiofuradene (17 gm., 25 gm., 37 gm., 55 gm., 83 gm. and 125 gm. per ton) was reported by Griffin (Tennessee). These levels were compared against Aureomycin, tylosin and two levels of Virginiamycin. A stimulation in rate of gain was apparent from all antibiotics at all levels between weaning and 100 lb. liveweight. However, by the time the pigs had reached 200 lb., all differences in gains had disappeared, and there were no significant differences in gain among the various treatments.

In another test of a large variety of additives fed at various levels, Miller (Kentucky) conducted research to determine the value of various additives to young pigs. However, the research was concluded at 50 lb. liveweight in one trial and at 125 lb. in the other two. Of course, this data is meaningful for the welldoing of the young pig, but it does not point out whether there would be an advantage by the time the pigs reached market weight. Additives which gave at least a 10% increase in rate of gain over the controls in one or more of the trials were as follows: 50 gm. Virginiamycin; 100 gm. Virginiamycin; 100 gm. Aureomycin; 20 gm. Virginiamycin; 40 gm. Virginiamycin; 20 gm. Aureomycin; 20 gm. Pro-strep; 20 gm. zinc bacitracin; 20 gm. tylosin; 20 gm. Terramycin, and 2 lb. copper sulfate.

In another young pig study, Johnson (American Cyanamid) conducted research to compare antibiotic combinations for pigs weaned at three weeks and continued on research for six weeks. The following treatments and daily gains were obtained: Control, 0.48 lb. per day; 100 gm. chlortetracycline per ton, 0.68 lb.; 100 gm. chlortetracycline and 100 gm. sulfamethazine per ton, 0.78 lb., and 100 gm. chlortetracycline, 100 gm. sulfamethazine and 49 gm. procaine penicillin per ton, 0.88 lb. Each treatment resulted in gains that were significantly greater than the previous treatment.

Another additive, sodium acrylate, was investigated and reported by the same company (American Cyanamid) by Drain. In growth studies with pigs between 28 and 125 lb., levels of either 500 gm. or 1,000 gm. of sodium acrylate per ton of feed, either alone or in combination with chlortetracycline, resulted in significant increases in daily gain. However, under farm feeding conditions, four feeding trials failed to show any advantage for sodium acrylate alone, whereas a significant increase in gain was obtained from feeding chlortetracycline.

COOKED SOYBEANS—Jimenez (Purdue) reported on research to compare ground heated unextracted soybeans with regular solvent extracted soybean oil meal as a source of supplemental protein in a typical corn-soy ration for growing and finishing swine. Actually, pigs fed ground heated unextracted soybeans gained 10% more rapidly than those fed conventional soybean oil meal. There was no significant difference in thickness of backfat among the treatments. Feed requirement per pound of gain was 13% better for the ground heated unextracted soybean group. The lard from the pigs fed the ground heated unextracted soybeans showed a higher degree of unsaturation as indicated by the iodine number.

Comment—Apparently the feeding of ground heated unextracted soybeans as a supplemental source of protein to swine produced slightly more unsaturation in the lard portion. We have progressed a long way since the day of the so-called "soft pork" in the 30's. Today, nutritionists are recommending that the American people should eat more unsaturated and less saturated fats. The use of ground heated unextracted soybeans has provided us with a tool for producing a greater degree of unsaturation in our pork carcasses.

PROTEIN AND AMINO ACIDS—Level of protein as well as quality of protein were both quite important from the standpoint of rate of gain as well as quality of carcasses produced by swine in research reported by Clawson (North Carolina). Ten percent protein corn-soy rations were formulated so that 12.5, 25 and 50% of the protein was supplied by dehulled soybean oil meal. These rations were fed with and without 0.4% lysine. Lysine was of most benefit in improving daily gain and feed per pound of gain in rations of low protein quality. Area of loin eye muscle was improved by both improved protein quality and by the addition of lysine.

At the neighboring Virginia station, Vipperman reported a similar improvement in quality of pork carcasses produced as a result of lysine supplementation. A corn-peanut oil meal ration was supplemented with 0.0, 0.3, 0.6, 0.9 or 1.2% L-lysine HCl. Results indicated an increase in total muscular mass with lysine supplementation. The carcass specific gravity increased, reaching a maximum at 0.9% supplemental lysine. Higher specific gravity indicates more muscle and less fat. An example in the increase in lean was shown by a 50% increase in weight of the l. dorsi muscle in the lysine-supplemented lot.

SOY AMINO ACIDS—Soybean oil meal combines with corn at the usually recommended levels of protein feeding to make a very good balance of essential amino acids. However, when the amount of protein is limited, which amino acids would show up as deficient first? Berry (Illinois) discussed research results in which such objectives had been studied. In a glucose-soybean meal diet, a level of 8% protein, as supplied only by soybean meal, was studied. The addition of methionine to this diet increased rate of gain, but not as much as a combination of methionine and threonine. Pigs fed a 12% corn-soy diet supplemented by 0.05, 0.10 or 0.15% DL-methionine with and without 0.1% supplemental L-lysine gained fastest at the lowest level of methionine supplementation. However, this gain was less than that made by pigs on a 16% protein corn-soy diet.

Comment—This research points out that balance is so very important when levels of amino acids are discussed. The ratio of each amino acid to every other amino acid is the key. The adding of too much of a certain amino acid may be almost as bad as not adding enough.

Kroening (Cornell) conducted research to determine the optimum methionine level for suckling pigs, 10 days of age at the start. Isolated soy protein, casein or soybean meal were added to purified ingredients as sole source of protein and all rations contained 12% protein. The calculated methionine-cystine level of the test rations ranged from 0.19% to 0.65%. Pigs fed isolated soy protein rations supplemented to contain 0.42% methionine-cystine performed as well in every respect as those fed the 0.65% level.

PIG STARTERS—Thrasher (Commercial Solvents) studied the sucrose replacement value of glutamic acid salts in pig starter rations for pigs starting at 3 weeks of age. Monosodium glutamate seemed to add a palatability factor over and above that supplied by as high as 15% sucrose. Various combinations of monosodium glutamate with sucrose had been investigated, but the exact sucrose substitution value had not been determined. So-called "expansion" of rations had a deleterious effect on three-week old pigs in research reported by Nelson (Walnut Grove). Baby pigs gained almost as much on a commercial pig starter as on any of the several expanded rations during a three week trial. The expanded diets contained either 5 or 10% fat, and one expanded diet was coated with milk, fat and whey. In preference study, a 10% fat diet was preferred over a 5% fat diet, representing 80% of the feed consumed; the 10% sugar diet was preferred over the no sugar diet, constituting 74% of the feed consumed; the coated diet was preferred over the uncoated diet by 99.9%, and there was no preference between the expanded diet and the commercial diet.

Grinstead (Iowa) compared various levels of sucrose in the diet for baby pigs starting at two weeks of age. Levels from 0.625% through 10% of sucrose were checked. The results clearly demonstrated that pigs two to six weeks of age prefer a ration containing sucrose to a ration containing no sucrose and prefer the rations containing the higher levels of sucrose. The results also showed that pigs of this age could detect dietary sucrose at levels as low as 0.625%.

MARKETS

(Continued from page 2)

In the absence of something out of the ordinary in the way of bad weather or other basically bullish influence, they frequently suffer by comparison with other weeks. However, considering that hogs are down $1 or so from their recent tops plus the situation in the broiler and turkey industries, mixers do not have too much to complain about.

Generally speaking, mills are operating on a 40 hour week.

Feed prices reflect higher millfeed and soybean meal prices.

South Central

Good demand for formula feed continues this week. Almost without exception, the industry units are operating on a capacity basis with the majority running six days.

Interest in most types of feed is good, with hog and cattle feeds leading in volume. The hog-corn ratio is not quite as high as it was several weeks ago, but it is not unfavorable and the lower ratio doesn't seem to be holding down sales. Cattle feeds, booked earlier in the season, are moving at a steady rate.

Price lists are expected to be higher this week. Protein ingredients and millfeeds have moved up sharply and the lists will reflect the higher costs.

Ohio Valley

Formula feed business in the Ohio Valley was slow this week.

There was a slight increase in demand for cattle and dairy feeds. Hog feed demand continued to be good.

Prices for poultry and eggs in the retail market were steady to meet the light demand.

Pacific Northwest

Movement of formula feeds was on the spotty side throughout Oregon, Washington and Idaho this week.

Portland trade sources indicated the demand for turkey and frying chicken rations continued at a seasonally slow bell and that bulk of the sales consisted of laying mashes, dairy and livestock feeds.

Some Portland area poultry handlers indicated that they didn't expect as good a dressed turkey movement during the pre-Christmas food shopping period as was experienced prior to Thanksgiving because "hundreds of Pacific Northwest consumers have one or more 29¢ lb. turkeys in their frozen food lockers."

Portland producer paying prices for live fryers closed unchanged to 1¢ lb. lower this week after holding unchanged for three straight weeks. This poultry class is now valued at 14 to 19¢ lb., f.o.b. Willamette Valley ranches.

Mountain States

Feed volume has slowed down somewhat in the Rocky Mountain area.

Cattle range feeds are holding, and feedlot feeding is steady to stronger. It is expected that cattle feed volume will increase in the next few weeks as more cattle come off the range. Layer feeds are steady.

Delmarva

A couple of days of improved broiler prices have caused broiler growers to forget much of the grief they have had during the last six months. Prices have gotten as high as 16.1¢ here.

Improved prices have come a little sooner than anticipated. No relief was expected until after the first of the year. Now, of course, those in the broiler industry are keeping their fingers crossed, hoping the prices will continue to strengthen.

The average price paid per pound last week in Delmarva was 13.72¢, a third of a cent above the previous week. Feed prices dropped a dollar per ton. A pound of broiler meat would buy 3 lb. of feed. This is the first time since the end of September that the ratio has been three or better.

Feed manufacturers for the broiler industry have continued to run their mills full time through the six months' slump in price. In a few cases mills have run on shifts.

Northern California

Reports from formula feed manufacturers in this area show an optimistic trend. Mills in most instances are operating on a normal five day basis. Some extra hours are needed to keep ahead of the demand at some plants.

Turkey feeds are holding up well as birds are being finished up for the holiday season.

General rains have continued during the past week. New forage growth has begun on ranges throughout the north part of the state. Supplemental feeding for both cattle and dairy herds will be necessary until the new growth can be grazed.

It was noted here that some dairymen have purchased as much dairy feed in the first nine months of 1961 as during all of 1960.

Southern California

With the major portion of turkeys marketed or moved into cold storage, feed men find a noticeable decrease in both sales and production. A few turkey producers have decided to hold the birds until the Christmas season hoping prices may improve somewhat.

Several feed mills working overtime and extra shifts during the last six months have returned to one eight-hour shift. Growers and large contractors are undecided as to plans for next year after reviewing the heavy losses incurred this season. A more conservative approach can be expected.

The broiler markets have increased slightly, but prices still remain below replacement costs. Many producers continue in business only because they anticipate a government marketing order program.

Egg prices are unchanged this week with all producers predicting extreme price decreases by January or February. Many poultrymen have been salting recent profits into various expansion programs and will feel any price squeeze whenever it might occur.

Cattle feedlot managers report better beef prices should exist after Jan. 1. This market has been steady but not increasing because of cheap turkey and chicken prices.

Feed prices have remained about unchanged with lower corn and meat meal prices being counterbalanced with firmer milo and soybean meal costs.

Special Grain, Feed Meeting Scheduled

CHICAGO—The winter meeting of the American Society of Agricultural Engineers in Chicago will include a special session on grain storage and feed processing. The special session will take place Wednesday, Dec. 13, at the Palmer House.

Dr. Harry B. Pfost, department of milling industries, Kansas State University, will preside at the special meeting. Topics include such things as grain storage design, corn drying, flow of granular materials in bins, feed mixing and segregation problems, design of feed plants for nutrition research, need for equipment and test standards for processing machinery and production organization for specification products.

Among the speakers will be G. A. Karstens, Feed Age; Art W. Stegner and Alan Cook, Butler Mfg. Co.; Robert C. Wornick, Chas. Pfizer & Co., Inc.; T. E. Stivers, milling engineer, Decatur, Ga.; Ralph Williams, B. F. Gump Co., and George Thomas, Prater Pulverizer Co., representing the Grain Processing Machinery Manufacturers Assn., and Loren V. Burns, Mel Miller & Co., Kansas City.

The special program was arranged by ASAE in cooperation with GPMMA, American Feed Manufacturers Assn. and Feed Production School, Inc.

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